Work ability assessment of employees on long term sick leave in insurance medicine

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Chapter 7

General Discussion
General Discussion

The principal aim of this thesis is to contribute towards improvements in the work ability assessments of employees on long-term sick leave that are performed by insurance physicians in the Netherlands. The first step was to generate data on the factors associated with long-term sick leave, i.e., sick leave lasting 18-24 months.

This chapter starts with a brief report of the main findings of the studies described in this thesis, in the light of the research questions posed in the general introduction (Chapter 1). Second, issues relevant to the studies will be highlighted, and research strategies used in this thesis will be discussed. Third, the implications for the work ability assessment of IPs will be addressed. Finally, recommendations for practice and for future research are provided at the end of this chapter.

Main findings

1- What factors hinder or promote return to work by employees on long-term sick leave? (Chapter 2-5)

Four studies were devoted to answering the first research question. A total of 30 factors that promote return to work by employees on long-term sick leave were found and categorised as follows:

- Person-related factors (n=6): work motivation, positive self-efficacy expectations, positive attitude of employee towards return to work, positive personal characteristics of the employee, positive meaning of work and positive perceptions of illness.
- Work-related factors (n=4): degree of control over working situation, provision of vocational rehabilitation as soon as possible, support from colleagues and positive workplace conditions.
- Factors related to guidance of the employee (n=16):
  - Factors influencing the behaviour of employees on sick leave’ (n=6): improving the employee's social skills, teaching the employee to cope with his or her disabilities, influencing thoughts and/or behaviour, encouraging a sense of responsibility in the employee, confronting the employee with his own future and increasing the employee's understanding of the situation.
- Factors related to communication (n=7): taking the employee seriously, open communication among RTW stakeholders, effective communication with employee, communication at the same level or in the same language, optimal guidance from vocational-rehabilitation professionals, cooperation among all RTW stakeholders and cooperative vocational rehabilitation by employee’s professional-social network.
- Physician-related factors (n=3): a good occupational physician, avoiding conflicting advice from treating physicians and an interest for work-related issues by treating physicians.
- Socio-economic factors (n=4): stimulating social environment, financial incentives for employee, financial incentives for employer and financial consequences of sick leave.

A total of 27 factors that hinder return to work by employees on long-term sick leave were found and categorised as follows:
- Factors related to the medical condition (n=5): presence of disease, activity limitations, impairment, participation restrictions and history of sick leave.
- Person-related factors (n=8): older age, low educational level, character style, negative Illness perceptions, negative attitude of employee towards return to work, negative self-efficacy expectations, poor coping style, inefficient coping style regarding return to work.
- Work-related factors (n=5): imbalanced work ability-task contents, task contents, problematic working environment, problematic work relationships, adverse workplace conditions.
- Factors related to guidance of the employee (n=4):
  - Reintegration-related factors (n=1): Inefficient guidance from RTW stakeholders.
  - Physician-related factors (n=3): treating physicians who promote illness behaviour or advise incorrectly concerning RTW, medicalisation, physicians focusing strictly on medical issues instead of paying attention to non-medical factors
- Socio-environmental factors (n=5): lack of social support, social influence, combined workload, negative environmental factors and secondary gains from illness (Chapters 2-5).
2- Which factors that hinder or promote return to work should be considered during the work ability assessment of employees on long-term sick leave? (Chapter 5)

To answer the second research question, a Delphi study was performed under experienced Dutch IPs.

The factors that promote return to work and should be considered during the work ability assessment of employees on long-term sick leave are motivation, positive attitude towards work resumption and resumption guidance provided from an early stage.

The factors that hinder return to work and should be considered during the work ability assessment of employees on long-term sick leave are secondary benefits of the condition, negative perceptions of illness, inefficient coping, work-inhibiting cognitions and behaviour, absenteeism-promoting attitude and/or inappropriate resumption advice from treatment providers and the inability to accept limitations.

To bring this new knowledge into practice, we developed a checklist with definitions and examples aimed at assisting IPs in identifying nine factors that hinder or promote return to work during the work ability assessment of employees on long-term sick leave (Chapter 5).

3- Is it feasible to implement a checklist to assess factors relevant to work ability in the daily practice of Dutch insurance physicians? (Chapter 6)

To answer this question, a nationwide implementation study was performed for the newly developed “Checklist to assess factors relevant to work ability assessments of employees on long-term sick leave”. The results of the implementation study demonstrated that it is feasible for IPs to implement the new checklist in daily practice. The results showed good adherence (89%), IPs were willing and able to use the checklist. Almost all IPs assessed at least one factor, 97% of the IPs identified at least one factor, and 90% of the IPs reported at least one factor when using the checklist.
Factors associated with long-term sick leave

The focus of this thesis is determining factors that cause or contribute to long-term sick leave, irrespective of the underlying disease. The goal was to gather knowledge about these factors and to apply this knowledge to improve the quality of work ability assessments.

The literature about sick leave is extensive, but it is not easy to draw conclusions on causal relationships, as many studies show problems with methods involving the selection of participants and insufficient control of confounding factors (1). Many studies on prognostic factors for sick leave include populations on sick leave for less than 6 months due to specific diseases (2). More studies on factors associated with long-term sick leave are needed (3), but there is little research on factors that promote long-term sick leave (3). A recent Dutch socio-economic study found that perceived health, health-status expectations and the availability of vocational rehabilitation influence work resumption by employees on long-term on sick leave (5).

To gain insight into the factors involved in the maintenance of sick leave by employees who are already on sick leave, we described the predisposing, perpetuating and precipitating factors of long-term sick leave (6) (Chapter 2). The perpetuating factors are associated with sustained sick leave and were the focus of this thesis. The use of Spielmans’ classification was innovative in work disability research and proved useful in understanding the complexity of long-term sick leave because the perpetuating factors may clarify why some people stay do not return to work after extended leave, while others with similar complaints return earlier.

Chapters 2-5 discuss the investigation of perpetuating factors from different perspectives, i.e., patients on long-term sick leave, vocational-rehabilitation counsellors who assist in work rehabilitation and insurance physicians with experience in the assessment of employees on long-term sick leave. The multiple-perspectives approach enabled us to gather a rich variety of factors by using the expertise of different stakeholders.

Research methods used in this thesis

Given that previous (qualitative and quantitative) research on long-term sick leave is lacking (3), we mainly used qualitative methods to
investigate the research questions posed in this thesis. The qualitative studies in this thesis yielded valuable insight into factors affecting return to work and contribute to an understanding of the obstacles faced by employees on long-term sick leave during their return to the workplace. One of the strengths of this thesis is that methodological triangulation was applied to investigate the first research question, on approaches for gathering data and to increase confidence in the findings (7,8). We used different participants in four studies. We used consecutive literature research (Chapter 2), focus groups (Chapter 3), semi-structured interviews (Chapter 4) and a Delphi study (Chapter 5) to gather data, which added value to our findings and permitted us to obtain a broad knowledge of factors relevant to work disability. The use of different research methods in this thesis exposed 57 factors associated with long-term sick leave (Chapter 5). 51 of these factors were included in the preliminary list. IPs mentioned 4 new factors that hinder RTW and 2 new factors that promote RTW of employees on long term sick leave. Some of these factors have already been reported in the literature in relation to short- and mid-term sick leave and return to work, but not in relation to sick leave lasting longer than 18 months. The studies included in this thesis yielded valuable data about factors associated with long-term sick leave, and these findings can be regarded as the basis for long-term disability research in the field of insurance medicine.

Qualitative research methods are especially useful when there is little previous theory or research in a certain field (7) and can be used to investigate subjects’ beliefs, experiences and needs (9), however, qualitative methods also have weaknesses (10). For instance, the output from focus groups might be biased by a few participants that tend to dominate the meetings, especially given inexperienced or untrained moderators. Therefore, it is crucial to reduce the dominant role of some participants (11). The moderators in our focus groups were physicians with extensive experience in interviewing patients and had also been specifically trained to conduct focus groups. The moderators were aware of the potential pitfalls, ensured that all participants participated equally in the discussion, and encouraged all participants to generate responses based on their own experiences.

The results of the focus-group research are not representative of the entire population studied. Hence, the aim of qualitative methods is not to identify a statistically representative set of respondents, but to yield detailed views of the phenomena under investigation (12). Data
saturation is necessary to obtain consistent results, which ideally results in a larger number of people represented (13). In this research, the focus groups continued until data saturation was achieved. Data saturation was reached after four focus-group interviews, as was confirmed by the fifth focus group. Both the number and the type of participants are relevant to the outcomes. To obtain a range of views, the respondents should cover a wide range of ages, socio-economic classes, cultural backgrounds, etc. (12). To this end, special attention was paid to the sampling procedure, using purposive sampling to recruit the participants. All participants were on sick leave for longer than 18 months and met the eligibility requirements for a disability pension. Furthermore, adequate measures were taken to ensure that the focus groups provided a good representation of the entire population of long-term employees on sick leave in the Netherlands. The participants were selected on the basis that the focus groups should maximise the variability of perspectives and obtain information from a wide range of employees on sick leave, which could thus represent the population of employees on sick leave in the Netherlands. To ensure wide representation, we approached a heterogeneous sample of employees living in all five geographical regions of the Netherlands, with different demographics and work settings. This recruitment procedure ensured that the final sample was diverse.

Participants might find it difficult to share their feelings and ideas about personal topics in a group, however, some participants might feel encouraged to talk freely in a focus group with peers with similar problems. Moreover, focus groups can promote exchange of ideas and discussion, participants can come to reconsider their initial views through discussion with peers and gain new insight into a topic, enriching the results (14). An alternative to focus groups would have been face-to-face interviews. Interviews may have some advantages, such as privacy, which may promote communication, however, some individuals may find interviews intimidating, which may hinder communication and influence the outcome. This research focuses on the obstacles that employees on sick leave encounter over two years of sick leave, focus groups seemed adequate to elicit the views of the participants. Interaction in a group facilitates lively discussions, which can provoke unexpected reactions and reveal interesting points of view that would not be revealed by face-to-face interviews. Our participants had all been on sick leave for 2 years. We found that discussion about the obstacles they encounter could elicit
richer information than individual interviews. Studying the patient’s perspective using focus groups enabled us to obtain a better understanding of the drivers of long-term sick leave. In addition, the participants were also enthusiastic about taking part in the study and found the discussions useful.

It has been suggested that the use of structured rather than open-ended questionnaires may limit the quality of the output of Delphi studies (15). Our first Delphi questionnaire started with a preliminary list of 51 factors generated in the first three studies of this thesis. To avoid restricting the panellists’ answers with structured questionnaires, we encouraged participants to add new factors to the preliminary list based on their expertise. This strategy is useful in eliciting new views (16,17). The IPs added new factors, which were incorporated in the subsequent questionnaire. Some of these new factors were physician-related (i.e. treating physicians that promote illness behaviour, medicalising, physicians focussing on strictly medical issues instead of paying attention to non-medical factors) or secondary to the illness (secondary gain from illness) and had not been previously mentioned in the literature in association with long-term sick leave.

The Delphi methodology is a combination of qualitative and quantitative methods and has been used successfully in healthcare research (15-22). In contrast to focus groups, the Delphi method allows anonymous participation of respondents, avoiding social pressure and individual dominance of some participants (17). Participants in Delphi studies are experts in a field and are supposed to be able to provide “expert information”. The choice of participants who act as “experts” in a Delphi study is crucial, as the method is based on the cumulative expertise of the participants (16).

Not all individuals with experience in a certain field can be considered “expert”. This consideration is interesting because the experts’ estimations are based on their own knowledge and expertise (17), and they determine the outcome of the study. Therefore, the experts in Delphi studies should be chosen carefully. The selection criteria are expertise, interest and closeness to the research topic (18,19). The panellists in our Delphi study were carefully selected from a pool of officially registered IPs, guaranteeing the expertise of the participants. All experts in our Delphi panel had followed an specialised in-company training program, had a mean of 15 years’ experience as IPs (expertise), routinely performed work ability assessments of employees on long-term sick
leave (closeness to the research topic) and were most likely motivated, as they participated voluntarily in all Delphi rounds (interest in the research topic). Therefore, we assume that our participants can be considered “experts” and that they provided “expert information”.

Data sources
Different sources were used to obtain the data for this thesis. First, the international literature was searched for information about factors associated with long-term sick leave. Stakeholders in return to work by employees on long-term sick leave include occupational physicians, general practitioners, and employers, and these stakeholders’ degree of involvement in the work reintegration varies. The choice for our participants was based on their degree of expertise in long-term sick leave. Employees on sick leave lasting longer than 18 months can be considered “field experts” and provided us with important information about the factors that hinder or promote return to work (Chapter 3). This assumption is in concordance with early research that showed that patients’ views of their sickness are valuable in improving treatment and rehabilitation (23,24).

Experienced vocational rehabilitation professionals (VRPs) who work with employees on long-term sick leave were interviewed (Chapter 4). Their close involvement with work rehabilitation and their frequent contact with employees on long-term sick leave (in contrast to other RTW stakeholders, who have only brief contact with employees on sick leave) were considered useful. The choice of four different types of sources (international literature, employees on sick leave, VRPs and IPs), seems to be sound, as it provided new, valuable knowledge about factors from complementary perspectives.

From new generated knowledge to practice
The new knowledge was bundled in a tool aimed at assisting IPs in identifying factors relevant to the work ability assessment of employees on long-term sick leave. A nationwide implementation study, performed in 2012, showed that IPs were willing and able to use the checklist in daily practice (Chapter 6). One of the strengths of the implementation study was that it was performed in the real daily practice of IPs, with real work ability assessments of employees on long-term sick leave rather than simulated cases or vignette studies, as in other implementation studies.
Although simulated cases promote discussion when used in medical education, they have methodological limitations. An important advantage of performing an implementation study in real practice is that IPs could use their knowledge during the interview assessments and could report their findings on the work ability-assessment records.

The group responders had the same demographic characteristics and work experience as the IPs. Only IPs who performed work ability assessments of employees on long-term sick leave were invited to take part in the study (n=200). A total of 79 IPs completed all questionnaires. This response rate was relatively high compared to the response rates in similar implementation studies. The target group was involved in the development and the adaptation of the checklist, which might have contributed to the high response rates. In addition, we also tried to facilitate IPs’ participation study by using questionnaires that were not too long or complex and did not take too much time to complete. Participants mentioned organisational constraints and time constraints as reasons for not participating in the study.

Different strategies were needed to tackle the obstacles to implementation that were identified with a context analysis, such as IPs’ negative attitudes and lack of motivation and lack of support from management or staff. We wanted voluntary participation, and we made efforts to provide IPs, their management and staff with sufficient information to show them the advantages of participating in the study. For this purpose, implementation was monitored at different levels (professional, local and regional) during all implementation phases. The useful implementation activities were matched to the obstacles identified during the context analysis performed prior to the implementation study. Different strategies must be used in combination at different stages of the implementation. Strategies included sending emails with information about the aim and advantages of the study, making telephone calls to participants and staff, sending reminders at different stages, approaching key persons in the organisation and planning visits to the workplace to provide information to potential participants and staff about the study. The combined use of different strategies made it possible to achieve the implementation goal.
Considerations concerning the “checklist of factors relevant to work ability assessments of employees on long-term sick leave“

According to the Work and Income according to Labour Capacity Act (the WIA Act), employees can claim disability benefits after two consecutive years of sick leave (35). IPs must evaluate work ability later in the sick-leave process i.e., 18-24 months after the beginning of the sick leave. After two years, factors other than those present at the beginning of the sick leave can negatively influence work ability. Research suggests that the impact of these factors can change over time (36,37), distinct factors might be involved in the perpetuation of sick leave. Therefore, IPs must consider all different factors when assessing the work ability of employees on long-term sick leave to make a thorough evaluation.

Some non-medical factors include behavioural and psychological aspects. The assessment of non-medical factors by IPs is a complex and challenging task because IPs have medical backgrounds but are not currently trained to assess psychological factors. The checklist proposed in this thesis can help IPs perform work ability assessments more accurately and systematically, which can lead to more transparency and can help to improve the assessments. The checklist could also help to improve the uniformity and transparency of the assessments. Moreover, the identification of obstacles to return to work using the checklist can help IPs provide guidance to employees on long-term sick leave.

One of the conditions that must be met to claim disability benefits according to the Dutch work legislation is that the incapacity to perform work is “the direct and medically determinable result of disease, disorder or defect” (35). Thus, incapacity due to non-medical factors is not formally assumed to qualify the employee for disability benefits. As a consequence, the assessment of the effects of disease on the ability to work is crucial. In this sense, the new checklist can help IPs determine whether the decrease in work ability is “the direct result of disease, disorder or defect” or whether it is mainly caused by non-medical factors operating in the context of a medical condition. For instance, the checklist can be helpful in the case of medically unexplained conditions with predominantly subjective symptoms.

An important added value of the checklist is that it offers new opportunities to enhance work by employees on long-term sick leave, a population that is difficult to reintegrate because of the many barriers to return to work (38,39). Most factors in the checklist that hinder return to work are amenable to change, such change can promote return to work, even when people are already 2 years on sick leave.
The results of this study contribute to long-term sick leave research, especially in the Dutch context. Although the factors included in the new checklist are based on a consensus of Dutch insurance physicians specialising in the assessment of employees on sick leave lasting 18-24 months, the findings can potentially be applied in an international context. The conditions that permit sick leave, however, vary over time and among nations (40). For this reason, it is important to consider the social security and work legislations of the countries when studying sick leave, as these factors can influence the application of the checklist in other socio-legal contexts.

Use of the checklist during the work ability assessment could inhibit the spontaneous communication between the IP and the employee on sick leave because the use of assessment tools might introduce a standardised communication process, however, it is expected that IPs would learn how to assess the checklist factors over several weeks. Moreover, the checklist can provide useful knowledge that IPs can use during the work ability assessment, potentially improving communication.

Three-step method to assess work ability of employees on long-term sick leave and results

A systematic method to assess work ability of employees on sick leave for periods longer than 18 months is proposed based on the results of this thesis. The rationale underlying this method was described in Chapter 1. Below, the results of the studies in this thesis are presented in Figure 2 (Fig. 2).

The factors form two groups: 1) factors likely to inhibit the return to work, and 2) factors likely to promote return to work. Factors from group 1 may lead to chronic disability for people on long-term sick leave. Factors from group 2 may promote work by people on long-term sick leave.

1. Step 1 represents the work ability assessment of employees on long-term sick leave, as routinely performed by Dutch IPs (usual care). The work ability assessment is based on the ICF and encompasses the assessment of disorder/disease, functions, structures, activities, and participation. An important aspect of the work ability assessment is the interaction between the IP and the client.

2. In step 2, IPs identify factors that hinder or promote work by employees on long-term sick leave using the checklist of relevant factors.

3. In step 3, IPs advise employees on sick leave, aiming to counter the factors that hinder return to work and stimulate factors that promote return to work.
The proposed three-step method is innovative in insurance medicine because it adds two extra steps to the work ability assessment currently performed by IPs in the Netherlands. IPs are crucial because they identify the obstacles to return to work (step 2) and provide tailor-made advice to reduce the identified barriers (step 3). Step 2 has already been implemented successfully in practice (Chapter 5). Step 3 has not yet been investigated but is crucial to promoting return to work.

The three-step method could help IPs perform their tasks better and has the potential to improve work ability assessments. The ultimate goal of the 3-step method is to promote return to work by employees on long-term sick leave. The identification of barriers and facilitators through the checklist is not sufficient to improve return to work by employees on long-term sick leave. It is also necessary to take specific measures to address the identified factors. To this end, IPs need up-to-date information about effective interventions so they can provide specific, evidence-based advice to their clients. The introduction of steps 2 and 3 could improve work ability assessments of employees on long-term sick leave. Furthermore, this new method would add a new dimension to work ability assessment in insurance medicine.

Implementation research has shown that physicians are often reluctant to adopt innovations (41). It is expected that this also would be the case for the three-step method due to time and organisational constraints, which have been reported as obstacles to implementation (42). The 3-step method may be time-consuming in daily practice, especially in early implementation because IPs would have to use the checklist (step 2) and then advise their clients (step 3), however, time was not an obstacle if IPs were motivated enough to use the tool. For this reason, it is important to show the potential users (IPs) the added value of the new method to improve its acceptability. Specific implementation strategies will be needed to introduce the three-step method into the routine practice of IPs.

Another viewpoint is that IPs currently do not provide advice on how to reduce obstacles and that advice should therefore not be included in the work ability assessment. This interesting viewpoint requires further elucidation.

To understand the usefulness of this method, steps 2 and 3 should be linked to the four main tasks of IPs during work ability assessments, as
recommended in the general introduction section in the insurance-
medicine guidelines (43).

The four main tasks of IPs according to the guidelines are listed below, followed by the application of the three-step method for each task:

1. Task 1 includes the assessment of social-medical history, including analysis of the course of the sick leave, inability to work and slow recovery from the first day of sick leave. Application of the three-step method in task 1: the checklist can help IPs analyse the factors associated with inability to work and slow recovery (step 2).

2. Task 2 is the assessment of the functional capacity of the employee on sick leave. This task includes an evaluation of incapacity in relation to the disease, disorder or defect. Such assessment is the main task of IPs. Application of the three-step method in task 2: the checklist can help IPs elucidate the degree to which the decrease in functional capacity is caused by the medical condition or by non-medical factors (step 2).

3. Task 3 comprises the evaluation of the prognosis of the employee’s medical condition and functional capacity. Application of the three-step method in task 3 involves the following: the checklist can help IPs assess the course of the functional capacities reduced by non-medical factors. Identification of these factors and their impact can enable IPs to predict the course of recovery (step 2).

4. Task 4 includes the evaluation of the treatment received by the employee. According to the insurance-medicine guidelines, IPs should evaluate the appropriateness of the treatment received by employees on long-term sick leave. If lack of or inadequate treatment has contributed to the incapacity in recovery and work, IPs should communicate with occupational physicians or treatment physicians to determine which measures are needed to promote recovery and work by the employee on sick leave. Application of the three-step method to task 4 involves the following: IPs can reduce the obstacles to return to work using up-to-date information about effective interventions (step 3). IPs can apply their knowledge of factors that promote or hinder work to communicate effectively with other medical professionals and to advise evidence-based interventions.

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Factors liable to inhibit return to work
1. Inefficient coping style regarding return to work
2. Negative illness perceptions
3. Secondary gain
4. Sickness behaviour-promoting attitude and/or inappropriate advice from treating physicians
5. Cognition/behaviour that hinder return to work
6. Inability to accept limitations

Factors liable to promote return to work
1. Positive attitude towards resumption
2. Work motivation
3. Vocational rehabilitation provided from an early stage

Employee on long term sick leave

Chronic work disability

Return to work

Work ability assessment of employees on long term sick leave
1. IP performs medical assessment of disorder/disease, functions, structures, activities, participation
   - Interaction between IP and client
2. IP performs the assessment of factors liable to hinder or promote return to work using the checklist
3. IP provides advice to help tackle obstacles and promote return to work

Figure 2. Three-step method for the assessment of work ability and the results of this thesis. Based on ICF 2005, Dekkers-Sánchez et al 2008.
Recommendations

Recommendations for the practice

Implications for the practice of insurance physicians
- The checklist of factors relevant to work ability assessments of employees on long-term sick leave is a tool meant to complement IP’s judgement. Applying the checklist during work ability assessments helps ensure that key factors involved in the maintenance of the sick leave are identified and can help improve the accuracy of work ability assessments.
- Knowledge about the factors that impede return to work allows the targeting of tailored interventions aiming at promoting return to work, adding value to the profession.
- Use the checklist in routine practice and make use of common language to describe the factors associated with long-term sick leave in your communication with other (health) professionals.
- Use the checklist in routine practice to improve the quality of your work ability assessments.

Implications for educational programs for IPs
The checklist of factors is comprehensive, user-friendly and is suitable for educational goals. The checklist may require training in practice.
- Training in how to use the checklist during the work ability assessment should include real cases.
- IPs need education about effective interventions and on how to advise promote work resumption by employees on long-term sick leave.

Implications for the organisation’s policy makers
Proper management of long-term sick leave is crucial due to the severe financial and social consequences for the individual and high costs to society. Work ability assessments are an important tool in managing long-term sick leave. The new developed checklist of factors relevant to the work ability assessment of employees on long-term sick leave can improve the quality of work ability assessments performed after 18 months of sick leave. The results of a nationwide implementation study showed that IPs are willing and able to use the checklist during work ability assessments of employees on long-term sick leave. This is a promising finding, suggesting good potential for improving the scientific
basis of insurance medicine, however, the literature shows that continued efforts are needed to promote the sustained use of innovations in practice (44-48). The policy makers of the organisation where most IPs work should promote the sustained use of the checklist in practice through monitoring, evaluation, promoting dissemination of the checklist and providing personalised training if needed. In addition, the application of the three-step method described in this thesis could help promote the return to work by employees on long-term sick leave.

- The use of the checklist could be promoted by introducing a digital version, which should be embedded in the work routine.
- Practical measures should be taken to encourage IPs to use the checklist to identify factors that hinder or promote return to work. Adjustments to the digital assessment reports used by IPs could be helpful, e.g., a subsection with factors relevant to work ability assessment could help IPs recall their findings.
- The systematic use of the checklist by IPs can promote consistency, uniformity and transparency in the work ability assessments.
- The checklist can help promote professional development of IPs, contributing to the improvement of the expertise of the organisation as a whole.
- It is recommended that step 3 be further investigated and implemented in practice. Knowledge of which clients have characteristics that hinder return to work is not sufficient, the most important application of the checklist is in identifying modifiable obstacles to return to work (step 2). The clients’ work ability assessment (step 2) should be translated into an action plan to address the identified obstacles (step 3).
- IPs should be helped in providing advice to their clients (step 3), e.g., by promoting cooperation with labour experts, vocational-rehabilitation professionals, health-behaviour experts or other health professionals. Sometimes, IPs will need to refer clients to other health professionals who can help them reduce the obstacles to return to work. Inter-professional (regional) meetings and organised professional collaborations between IPs and other health professionals could reduce obstacles to return to work.
- Up-to-date information about the best available interventions for promoting return to work should be available to IPs for routine use (step 3).
Recommendations for future research

- Research on the selective use of the checklist for work ability assessments of employees on sick leave due to specific diseases would be useful. The use of the checklist in cases with complex conditions (e.g., comorbidities and medically unexplained disorders) would help determine whether the checklist is especially useful for these types of medical conditions.
- Research on interventions aimed at improving the prognosis for return to work would help improve work-related outcomes.
- The systematic recording of the factors by IPs using the checklist can be useful in identifying research and intervention priorities.
- Evidence-based, factor-targeted interventions to effectively manage the factors that hinder return to work should be developed. In that way, step 3 can be incorporated into work ability assessments. Furthermore, the views of clients and IPs concerning the introduction of the 3-step method should also be investigated.

General Conclusions

The aim of this thesis was to gather knowledge about factors associated with long-term sick leave to improve work ability assessments of employees on long-term sick leave.

- Four studies revealed 30 personal and environmental factors that promote return to work and 27 personal and environmental factors that hinder return to work by employees on long-term sick leave.
- According to IPs, six factors that hinder return to work and three factors that promote return to work should be considered during work ability assessments of employees on long-term sick leave.
- It is feasible to implement a checklist to assess factors relevant to work ability assessments of employees on long-term sick leave.
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