Work ability assessment of employees on long term sick leave in insurance medicine
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Chapter 6

Implementation of an instrument to assess factors relevant for work ability assessments of employees on long term sick leave

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Under review
Abstract

Objective: To implement the use of a checklist with factors relevant to work ability assessments of employees on long-term sick leave. Subjects/design: Two hundred Dutch Insurance physicians (IPs) were asked to participate in a nationwide implementation study.

Methods: A context analysis identified the barriers and promoting factors for the implementation. Then, participants were asked to assess, identify and report the factors that hinder or promote return to work (RTW) of employees on long term sick leave using the checklist during six work ability assessments in daily practice. The outcome measure was the percentage of IPs that used the checklist in at least three of the six work ability assessments. The use of the checklist was defined as the assessment of at least one of the nine factors from the checklist. A frequency analysis was performed. Official work ability assessment records were analysed to determine whether the IPs reported the assessed factors.

Results: A total of 79 IPs participated in the implementation study. Almost all the IPs (96%) assessed at least one factor. High adherence rates (89%) were found. An analysis of 474 official work ability assessment records indicated that 90% of the IPs reported at least one of the factors.

Conclusions: The checklist seems to be a useful tool to assess barriers and facilitators for RTW of long-term sick-listed employees.
Introduction

Long-term sick leave is a recognised socio-economic problem in most Western countries (1). The situation of people on long-term sick leave requires special attention because of the risk of developing chronic work disability and permanent dependence on disability benefits (2-6). In most Western countries, disability policy reforms have taken place to reduce disability rates (7), but the work return of employees on long-term sick leave is still a considerable problem that has negative effects on psychological well being (8) and causes personal suffering, productivity loss and high medical and rehabilitation costs. Most research on this topic has mainly focused on factors related to short- and mid-term sickness absences (i.e., shorter than 3 months), and studies about the factors associated with sick leave longer than 18 months are scarce (9). Sufficient knowledge about the factors that hinder or promote return to work (RTW) in people on long-term sick leave is important in choosing the most appropriate RTW interventions.

Work ability is a relevant concept in occupational medicine and insurance medicine. Work ability has been studied with different theoretical approaches within several disciplines and from different perspectives. According to the biomedical perspective, work ability is the result of functional capacities due to the individual’s medical (physical, psychological or intellectual) condition, independent of non-medical factors (10). From a biopsychosocial point of view, work ability is the result of the interaction between medical condition, individual characteristics, work characteristics and environment (11). From a social perspective, work ability is influenced by socio-economic and political factors in the environment. Work ability has also been defined as a result of the interaction between individual and work (12). Work ability has also been defined as having the occupational competence, health and occupational abilities to perform the work tasks (13). In addition, work ability is a central concept in legislation regulating disability claims in relation to sick leave (14). This study is focused on the assessment of work ability as performed in the Netherlands by IPs according to the Dutch work legislation, which is based on the biopsychosocial approach (11).

Medical professionals play a key role in the medical assessment of long-term sick-listed employees. Reducing sickness absence and promoting the work return of employees on long term sick leave receives less attention than short-term sick leave (15). Research has shown that both
medical and non-medical factors are involved in the maintenance of long-term sickness leave (16,17). These findings imply that the physicians responsible for the assessment of the work ability of sick-listed employees should broaden the focus of the work ability assessment from a medical perspective to a broader perspective to tackle the underlying causes of the long-term sickness absences.

The assessment of the work ability of sick-listed employees is a specialised task. The type of medical professional responsible for the guidance of employees on sick leave and for the assessment of work ability varies by country, and governments employ different policies to address sickness absence. In the Netherlands, insurance physicians (IPS) are responsible for the evaluation of the work ability of employees on long term sick leave. Employees who are on sick leave for two years may apply for disability benefits according to Dutch law and have to undergo a work ability assessment to receive work disability benefits. The aim of the Work and income Act (WIA Act) is twofold; to promote reintegration and to protect the incomes of employees who are restricted in the work they can do due to illness or incapacity (18). Knowledge about factors that hinder or promote return to work can be useful for IPs to promote reintegration of employees on long term sick leave. This study is focused on the work ability assessment of employees on long-term sick leave who claim disability benefits in the Netherlands after being on sick leave for two years.

Currently, there are no suitable tools available that can be used by medical professionals in daily practice to identify the factors relevant to RTW during a work ability assessment. In a recent Delphi study, Dutch IPs reached a consensus on the most relevant factors that should be taken into account in the assessment of work ability of employees on long-term sick leave (17). According to Dutch IPs, the relevant factors that support return to work are motivation, attitude towards RTW, assessment of cognitions and behaviour, vocational rehabilitation provided from an early stage and instruction for sick-listed employees on how to cope with their disabilities. The relevant factors that hinder RTW are secondary gain from illness, negative perceptions of illness, inadequate coping strategies, and incorrect advice from treating physicians regarding RTW (17). The checklist of factors relevant to RTW was developed in an effort to provide a detailed checklist that would elicit relevant information regardless of the medical condition and could be used quickly and easily in daily practice. The content of the checklist (see appendix) was determined based on information gathered from different
Implementation of an instrument to assess factors relevant for work ability perspectives i.e. literature (9), patients on long term sick leave (15), vocational rehabilitation counsellors who assist employees on long term sick leave in their work rehabilitation (16) and insurance physicians with experience in the assessment of employees on long term sick leave (17).

Literature shows that the implementation of innovations in medical settings is a difficult task to accomplish, despite the use of adequate implementation techniques (19). Important barriers for the implementation of innovations in medical settings have been determined such as are lack of agreement with the recommendations, lack of awareness of familiarity with the innovation, attitude of the professional, lack of self-efficacy, organisational constraints, lack of time, lack of resources (20). The implementation of innovations in a medical setting is complex due to the fact that factors that hinder the implementation might operate at different levels, such as the level of the physician, the level of the patient, the level of the organisation, the social context, cultural context (21, 19). Tailor-made, phase specific implementation techniques aimed at tackling obstacles operating at the different levels are necessary for a successful implementation.

The first objective of this study was to determine the feasibility of using the checklist in the daily practice of Dutch IPs. We hypothesised that the introduction of the checklist would be feasible if at least 60% of the IPs used the checklist in work ability assessments during the implementation study. Feasibility was defined as the willingness and ability of IPs to incorporate the use of the checklist into their daily work. An additional objective of this study was to explore the factors that hinder or promote the implementation of the checklist in the daily practice of IPs.

We posed the following research questions:
1. What factors should be considered before implementing the checklist during the work ability assessment?
2. Are IPs willing and able to use the checklist during the implementation study?
3. Which barriers and facilitators to the implementation of the checklist were identified by IPs when using the checklist during the implementation study?
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Methods

Question 1: Factors that should be considered before the implementation

The first research question was answered by a context analysis before the implementation study to identify the factors that might hinder or promote the implementation of the checklist and following the recommendations of researchers that emphasise the importance of understanding the context in which interventions take place to achieve a successful implementation (21,22). The objective of the context analysis was to use the input from this analysis in our implementation study to facilitate the introduction of the checklist.

The participants of the context analysis were IPs from the Dutch Employees Insurance Authority (UWV) who performed work ability assessments of employees on long term sick leave. The IPs were selected at random from a group of 102 experienced registered IPs who had participated in the Delphi research prior to the implementation study. These IPs were selected to participate in the context analysis because of their familiarity with the factors included in the checklist, due to their participation in the Delphi study. Semi-structured face-to-face interviews were performed with IPs. The interviews included questions on factors that in the opinion of the IPs could hinder or promote the implementation of the checklist. The number of interviews continued until data saturation was achieved (23). The interviews lasted 45-60 minutes and were all audio-taped.

The procedure is explained as follows. Before starting the interview, the participants received the checklist by post and were asked to read the instructions and the checklist carefully. Following Logan’s model (24), the structured interviews included questions about the 1) factors related to the innovation (checklist), 2) factors related to the potential adopters of the innovation (IPs), and 3) factors related to the work environment of the potential users (IPs). The interviewees were asked to describe the expected benefits and drawbacks of using the checklist in the daily practice. The IPs were asked to comment on different aspects such as the complexity, the layout, the feasibility, the clearness and the usefulness of the checklist. The interview also included questions about the attitude, knowledge/skills of the potential adopters and the characteristics of the work environment that could influence the
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Implementation of the checklist (25). The questions were open-ended and non-directive, and the answers were further explored by the interviewer (23). The participants were encouraged to express their opinions about the usefulness of the checklist and to make predictions about the acceptance by their colleagues. The information obtained during the context analysis was taken into account during the implementation study.

Implementation study
The second and third research questions were answered using an implementation study to test the willingness and ability of IPs to use of the checklist in their daily practice. In addition, pre- and post-intervention questionnaires were used to study the ASE-determinants (26,27) of the IPs’ intention of using the checklist. The attitude, social influences and self-efficacy model (ASE-model), is based on the theory of planed behaviour (28) and the social cognitive theory (29) and has been used in health research to explain health behaviour (30,31).

Participants
The study population was a random sample, enrolled from the population of IPs working at UWV, an organisation that employs most of the IPs in the Netherlands. The eligible subjects for this study included the entire population of IPs that perform work ability assessments of disability pension claimants who have been sick-listed for two years. IPs from all geographical regions in the Netherlands were invited to participate. In total, 220 IPs were called to participate. Participation was voluntary, and the participants did not receive any financial compensation. A sample size was calculated to ensure that we could demonstrate that 70% of the IPs used the checklist with a 95% confidence interval of 10%. (32). The calculated sample size indicated that 100 subjects had to be included in the study.

Procedure
The potential participants were contacted by email or telephone by the researchers. Prior to enrolment, the IPs received detailed written information by e-mail about the rationale and aims of the study. The IPs consented to participate by sending an e-mail to the researchers. An information packet was sent containing detailed information concerning the aim and procedure of the pilot study, written instructions, research report forms, a return envelope and the checklist for factors relevant to work return. The participants were asked to read the checklist and the instructions carefully before using the checklist. The participants were
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asked to use the checklist during the normal work ability assessment of six employees on sick leave for two years. The choice of six work ability assessments was based on the fact that IPs perform on average between six to ten work ability assessments in a week. Therefore, the participants could complete the six work ability assessments in a week, and, as such, participation in the study would not be overly time consuming. The sick-listed employees were randomly selected by the IPs from the group of employees who underwent work ability assessments during the implementation study (July-December 2012).

Question 2: The willingness and ability of IPs to use the checklist during the implementation study.

To answer the second research question, all work ability assessments of employees on sick leave for two years were eligible for inclusion in the study. The IPs were asked to fill in a form after completing six work ability assessments and to report the factors they assessed and identified for the sick-listed employees during the work ability assessments. The participants filled the following information in the forms: 1) whether a given factor was assessed (i.e., the IP asked questions of the sick-listed employee to determine a factor), 2) if the IP identified the factor as a signal during the work ability assessment, and 3) if the IP reported the factor in the work ability assessment report. The IPs were asked to return the filled forms and the corresponding official assessment records they made for the sick-listed employees by post to the researchers. The participants received a certificate of participation in the implementation study. No incentives were provided for participation in the implementation study.

Question 3: The barriers and facilitators to the implementation of the checklist

The determinants of behavioural change, attitude, perceived social support and self-efficacy were measured by online questionnaires to answer the third question. The questionnaires were based on the ASE-model (18,19) to gain insight into the determinants for the (intention) use of the checklist by IPs. The participants received an online questionnaire before the start of the study (T0) and after the implementation study (T1).
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The questionnaire contained questions about the following:

− Attitude of the IPs towards the use of the checklist, such as, “Do you expect to use the checklist (yes/no)?”
− Self-efficacy of IPs: Do you think you have enough knowledge and skills to use the checklist (yes/no)?
− Social support of colleagues, manager and staff: Do you expect to receive enough support from your colleagues, staff and management to use the checklist (yes, no)?

Demographic questions were also included (gender, age and years of experience as IP). At the end of the second questionnaire, the participants were asked an open question: Do you have comments about the use of the checklist during the assessment of work ability?

**Outcome measures**

Question 1: the factors that hinder or promote the use of the checklist and that should be considered in the implementation strategy before starting the implementation study

Question 2:
Primary outcome measure:
The primary outcome measure was the percentage of participants that used the checklist in at least three of the six work ability assessments performed during the implementation study. The use of the checklist for each workability assessment was defined as the assessment of at least one of the nine factors included in the checklist during the implementation study.

Secondary outcome measures:
The secondary outcome measures were the percentage of participants that identified at least one of the factors during the implementation study and the percentage of participants that reported at least one of the factors during the implementation study in the work ability assessment records.

Question 3: the factors that hinder or promote the use of the checklist according to the IPs that used the checklist during the implementation study

**Data analysis**
1. Factors that should be considered before the implementation (question 1).
A content analysis was performed, using the framework of the model of Logan (33), and the data compiled during the context analysis were categorised according to this conceptual model. The model focused on the factors influencing the uptake of the innovation: the characteristics of the innovation, the potential adopters, and the practice setting or social context of the participants (33).

2. Willingness and ability of IPs to use of the checklist during the implementation study (question 2)

We defined the willingness and ability to use the checklist as having used the checklist in at least three of the six work ability assessments performed during the implementation study (primary outcome measure). The checklist was defined as being used when the participants assessed at least one of the nine factors included in the checklist. Statistical data analysis was performed using SPSS 19.0 to calculate the percentage of participants that used the checklist in at least three of the six work ability assessments performed during the implementation study. The frequencies for each factor and respondent characteristics were also analysed.

In addition to assessing the factors, IPs were asked to report the assessed factors in the work ability assessment records of their clients. We used the following procedure to analyse the work ability assessment records: The first author read each record accurately to determine if the IP had reported the presence of each of the nine factors for RTW in the official work ability assessment record of the sick-listed employees. Only the factors that were clearly reported in the assessment records were considered as being reported by the IP. The researcher filled a form for each case per IP, indicating which factors were reported in the work ability assessment record. All work ability assessment records were analysed by the first author. The second author analysed 10% of the cases (at random). Both researchers compared their findings. Any differences in opinions were discussed until consensus was achieved. If there were discrepancies, the two other members of the research team made the final decision.

3. Study of the barriers and facilitators to the implementation of the checklist (question 3)

This involved an analysis of the open question. The data from the open question in the post-intervention questionnaire was analysed using
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content analysis, focusing on two main categories: barriers and facilitators related to the use of the checklist. Sub-categories were then identified within these two main categories.

Results

Research question 1: What factors should be considered before implementing the checklist during the work ability assessment?

The results of the context analysis indicated that IPs were largely supportive of the checklist. Data saturation was achieved after ten interviews.

- The factors that can promote the implementation of the checklist related to the checklist are as follows: The checklist can help to provide structure in the work ability assessment; identifying the factors in the checklist can be helpful to improve the quality of the argumentation of IPs, and the checklist can make factors easier to analyse, classify, and advise how to address the problem, which could add more value to the work ability assessment.

- The factors that can hinder the implementation of the checklist related to the checklist are follows: the extensiveness of the checklist could make it difficult to use in daily practice, and some factors are similar to each other and can be difficult to recognise.

- A factor that promotes the implementation of the checklist related to the IPs is that IPs have enough knowledge and skills to use the checklist in daily practice.

- The factors that hinder the implementation of the checklist related to the IPs as follows: negative attitude of some IPs, i.e., some experienced IPs are “entrenched in their own way of working” and are reluctant to accept innovations; perceived lack of time, i.e., most IPs find that they lack time, which could make implementation of the checklist difficult; lack of agreement with the recommendations; and customs or habits of IPs.

- The factors that promote the implementation of the checklist related to the work environment are as follows: the staff and management are expected to support the checklist, and a digital version of the checklist should be available.

- A factor that can hinder the implementation of the checklist related to the work environment is high work load.
The results of the context analysis were applied to our implementation strategy to assure an adequate introduction of the checklist (34). The recommendations of the IPs were taken into account: the checklist was summarised, the factors were presented in a more logical and functional order, and some items were clarified as much as possible before starting the implementation study, following the advice of the participants.

**Research question 2: Are IPs willing and able to use the checklist during the implementation study?**

A total of 220 IPs were invited to participate, and 118 IPs agreed to participate. In total, 79 IPs completely participated in the implementation study. Almost all participants (96%) assessed at least one factor during the implementation study, and 97% of the IPs identified at least one factor when using the checklist during the implementation study (see table 1). The results of the implementation study indicated that 89% of the 79 participants used the checklist in at least three out of six work ability assessments.

The analysis of the 474 written work ability assessments records of the sick-listed employees performed using the checklist indicated that 90% of IPs reported at least one of the assessed factors in their final written assessments.
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Table 1: Use of the checklist by IPs and the percentage of assessed factors

| IPs                                                                 | Frequency | Percentage |
|---------------------------------------------------------------------|-----------|------------|
| Used the checklist in at least 3 work ability assessments            | 70        | 89%        |
| Used the checklist in less than 3 work ability assessments          | 9         | 11%        |
| Assessed at least one factor                                        | 76        | 96%        |
| Did not assess any factor                                           | 3         | 4%         |
| Identified at least one factor                                      | 77        | 97%        |
| Did not identify any factor                                         | 2         | 3%         |
| Reported at least one factor in the official work ability assessment records | 71      | 90%        |
| Did not report any factor in the official work ability assessment records | 8          | 10%        |

Identified factors and reported factors during the pilot implementation (n=79)

Research question 3: Which barriers and facilitators to the implementation of the checklist were identified by IPs when using the checklist during the implementation study?

A total of 79 IPs filled out the online questionnaire (n=79).

The reported facilitators to the implementation of the checklist were as follows:

- Attitude: 93% of IPs expected to use the checklist during the implementation study.
Perceived social support in the work environment of IPs: Prior to the intervention study, 70% of IPs thought that they would receive enough support from their management to use the checklist, and 71% expected to have enough time to use the checklist. In addition, 72% of the participants thought that the staff would support the use of the checklist. After the intervention study, two-thirds of the IPs believed that they would receive enough support from their management to use the checklist, 51% expected to have enough time to use the checklist and 67% thought that the staff would support the use of the checklist.

Self-efficacy of IPs: 94% of the baseline respondents reported they would be able to use the checklist during the implementation study, and 92% of the baseline respondents believed they had enough knowledge and skills to use the checklist.

Positive characteristics of the innovation: Half of the IPs (51%) believed the checklist added value to the work ability assessment. The IPs reported that the checklist provides insight into obstacles for RTW, is a good frame to perform the work ability assessment and can contribute to more complete and systematic work ability assessments wherein the IPs do not forget some factors that otherwise would not be taken into account. The IPs reported that the checklist can help them assess the relevant factors for RTW more easily and provide adequate advice for tackling the obstacles for RTW.

From a total of 79 IPs who filled the online questionnaires, 59 IPs responded to the last open question in the evaluation questionnaire. The following barriers and facilitators were identified by 1 to 7 IPs during the implementation study.

Barriers to the implementation of the checklist:
- Attitude: negative attitude of IPs towards innovations (n=2), beliefs related to time constraints (n=5), negative outcome expectations (n=2) and obsolete knowledge of IPs (n=3).
- Perceived problems with the use of the checklist in practice: some participants found the checklist too extensive (n=3), and some reported a perceived lack of time (n=5).
- Lack of self-efficacy: IPs reported that they lacked the experience and/or training to use the checklist correctly (n=6). Some IPs reported finding it difficult to communicate with their clients about the barriers for RTW (n=4).
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Facilitators to the implementation of the checklist: the checklist provides insight into obstacles for RTW (n=5), is a good frame to perform the work ability assessment (n=6), and the checklist can help IPs assess the relevant factors for RTW more easily and systematically (n=7). IPs reported that using the checklist can help IPs provide adequate advice to tackle the obstacles for RTW (n=4), and IPs reported finding the use of the checklist especially useful for complex work ability assessments (n=7).

Discussion

Main findings
The context analysis (question 1) revealed useful factors for the implementation strategy before starting the implementation study. The barriers were the extensiveness of the checklist, perceived lack of time, negative attitude and negative beliefs of IPs towards innovations, and lack of IP motivation. The promoting factors were that the checklist provides a clear framework to structure the work ability assessment and improves the awareness and visibility of factors that would otherwise remain unnoticed.

The implementation study (question 2) indicated that IPs were willing and able to use the checklist during the implementation study. The results demonstrated high rates of adherence to using the checklist. Most IPs used the checklist correctly. The correct use of the checklist implies that IPs could assess, identify and report the relevant factors when using the checklist.

The facilitators of the implementation of the checklist were as follows: a great majority of IPs (93%) expected to use the checklist during the implementation study and to be able to use the checklist (94%). Two-thirds of the IPs believed they would receive enough support from their management to use the checklist and more than the half of IPs expected to have enough time to use the checklist and believed the checklist added value to the work ability assessment. IPs mentioned that the checklist provides insight into obstacles for RTW, is a good frame to perform the work ability assessment, can help assess the relevant factors for RTW more easily and provide adequate advice on how to tackle the obstacles for RTW.
Interpretation of the findings

The implementation goal of more than 60 per cent of participants using the checklist in at least three of the six work ability assessments was achieved. This achievement indicates that the majority of participants were willing and able to use the checklist. We defined the use of the checklist for each work ability assessment as the assessment of at least one of the nine factors included in the checklist during the implementation study. It could be argued that the assessment of one of the nine factors is not sufficient to achieve a successful implementation, and that all nine factors should be assessed instead of only one of them. We believe that the assessment of one of the nine factors is sufficient to determine if the IP has used the checklist, because in practice it is unlikely that all nine factors are present in one person at a time. Furthermore, the identification of one factor by a sick listed employee implies that the IP is familiar with all nine factors included in the checklist, and that the IP suspects that one (or more) of the factors in the checklist is/are playing a role in the maintenance of sickness absence. Next, the IP decides to further investigate the factors by asking additional questions to the sick listed employee on the basis of the checklist to determine the presence of the specific factor he/she wants to investigate. This makes clear why we chose the assessment of one factor as sufficient to determine if the IP has used the checklist during the work ability assessment.

The high rates of adherence in our implementation study may be related to a sense of ownership by the IPs (35) because the checklist was developed based on the consensus of IPs and is intended to be used by IPs. Implementation research indicates that individuals vary in their willingness and speed to adopt innovations (36,37). According to the Diffusion of Innovation Theory, the adoption process shows a typical curve, including five groups adopters according to how quickly they adopt an innovation: innovators, early adopters, early majority, late majority, and laggards. Early adopters adopt the innovation very quickly. In addition, early adopters may promote the dissemination of the innovation (36). However, the speed of the adoption varies according to the innovation, the target group, opinion leaders, the implementation strategies, contextual factors, and the characteristics of the environment where the adoption takes place (34,37,38,39).

Previous research in insurance medicine has shown that participation of IPs in research is low (40). Taking into account this fact, and to facilitate participation of IPs, we decided to invite the whole population IPs (n=220)
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that perform work ability assessments of employees on long term sick leave at UWV in the Netherlands to take part of the implementation study. The response rate of 36% (79/220) is as expected. The sample showed to be heterogeneous and representative compared to the total population in terms of age, gender and work experience as IP.

In the present study, 89% of the participants used the checklist during the implementation study. These participants had a generally positive view of the tool and perceived its value in enhancing quality of the work ability assessment. An innovation has a good possibility to be successfully implemented if 20-40% of individuals adopt the innovation (36). The pattern of adoption of our checklist at over eighty per cent suggests that there are good possibilities for adoption of the checklist by the entire population of IPs.

Besides achieving a successful implementation of the checklist, it is also important to take the degree of long-term adherence, the factors involved in the maintenance of the levels of adherence (41) and sustainability of the implementation over time (42) into account. Different factors can influence the sustainability of implementations, such as contextual factors and factors related to the innovation and the users of the innovation (41-43). The sustainability of the implementation might be also influenced by interactions among factors at different levels (41,44). Therefore, it is necessary to promote sustained implementation by monitoring the course of the post-implementation period and tackling the factors that hinder the use of the checklist in practice. Future longitudinal follow-up studies of the implementation of the checklist could help determine whether the initial implementation gains remain stable over long periods of time, which factors determine the sustainability of the implementation and to develop specific strategies to maintain high adherence. For instance, long-term analysis of the official work ability assessment records and interviews with IPs could give insight into the post-implementation levels of adherence and in the factors that hinder or facilitate the sustained use of the checklist in practice. Then, tailor-made interventions, such as digital reminders, electronic records or other educational resources, could be developed to promote sustained implementation of the checklist.

Most participants were positive about the checklist. The fact that half of the IPs believed that the first version of the checklist added value to the work ability assessment indicates that a future introduction of a revised version of the checklist, adapted according the recommendations of the
participants, could be a valuable tool for work ability assessments. Our results are promising, since early implementation studies have shown that physicians do not adopt innovations easily due to lack of agreement with recommendations, because they argue the underlying evidence or because they feel that it is not clear why they should apply them (35). A minority reported it was difficult to use the checklist in their daily practice without extensive training about how to identify and report the factors. This is understandable because to be able to use the checklist correctly the IP has to first understand the difference between the factors, assess the factors during the assessment, identify the factors and then report the factor adequately. This suggests that a well-designed future implementation programme including training, feedback and/or expert consultation can be successful in achieving IP acceptance and use of our checklist.

It appears that IPs found some factors easier to identify than others. The negative attitude of a minority of IPs appeared to be a barrier to the implementation of the checklist, which is in concordance with earlier studies that indicate that physician attitudes towards health care innovations appear to affect their implementation (19,45).

The data analysis of the records of 474 employees on long-term sick leave indicated that the factors inefficient coping style (24%), positive attitude towards RTW (24%) and motivation towards RTW (20%) were the most frequently reported in the official work ability assessment records. It would be interesting to investigate using longitudinal studies if motivation, positive attitude and inefficient coping style are really the most frequent factors associated with sickness absences longer than 18 months. It is expected that motivated sick-listed employees and sick-listed employees with a positive attitude towards RTW would return to work earlier and would not stay longer than 1.5 years on sick leave, but this does not always occur and many motivated people do stay longer than 18 months on sick leave. Literature shows that long term sickness absence has a multifactorial nature (46,47), and the work rehabilitation process of an employee on long term sick leave occurs in a complex context involving multiple factors such as medical, psychological, social, environmental factors. The complexity of the context in which a sick listed employee functions and the several factors involved in the maintenance of sickness absence, could explain why motivated sick listed employees with a positive attitude towards RTW in some cases do stay longer than 18 months on sickness absence. This is in line with early research that shows the multicausality of sickness absence and work disability (48,49).
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and suggests that motivation and positive attitude towards RTW are just one of the factors involved in the maintenance of sickness absence.

To the best of our knowledge, there are currently no other checklists available that include the factors relevant to RTW for use in an assessment of work ability of all employees on long-term sickness leave longer than 18 months. The checklist in this study was developed to be used in all work ability assessments of employees on long-term sick leave, regardless of diagnosis or severity of medical condition. However, some participants expressed that the checklist could be especially useful in more complicated work ability assessments, such as when there is uncertainty about the degree of work limitations and the causes of the delay in RTW. It is not surprising that IPs find some disability assessments more complex than others, especially the cases when the subjective symptoms are stronger than the objective findings. The complexity of the work ability assessment is related to the specific situation of the sick-listed employee. For example, some employees on long-term sick leave not only suffer from different diseases (comorbidity) but may also have psychological complaints in addition to serious personal problems and problems in the work environment that may cause dysfunction and decreased work ability. The task of the IP is to take all these different factors into account during the work ability assessment. Our checklist can be helpful for systematically assessing the relevant RTW factors and gaining better insight into these factors.

Some participants mentioned that the checklist would be particularly useful during the first two years of sick leave for influencing the barriers of RTW in an early stage instead of in a later stage after two years of sick leave. This is an interesting point that needs further investigation, given that previous studies have reported that factors are phase-specific and show significant differences in the early, sub-acute and chronic phase of work disability (47-51). This suggests that the factors present at the start of the period of sickness absence may not be the same as the factors that perpetuate sickness absence after 18 months sick leave. Therefore, it may not be simply concluded that our checklist can be used at the beginning of the sickness absence without investigating first if the same factors are also present in an early stage. Future research could clarify if the perpetuating factors we found after 18 months sick leave are also present at the start of the period of sickness absence and how they vary across the sick leave period. For instance, phase specific analyses could
give more insight in changes in the strength and direction of associations during the course of the sick leave period.

One of the strengths of this study is that we employed an expert opinion-based methodology for the development of the checklist that included literature study, expert consultation and expert consensus. The users of the checklist were involved in the development of the content and in the test implementation of the checklist. Two of the members of the research team have extensive experience in the field of insurance medicine and also work as IPs. This enabled the authors to better understand the conditions under which the users would complete the checklist to determine the appropriate content and design of the checklist. Important aspects taken into account during the development of the checklist were ensuring that the checklist would not be too time-consuming and that the checklist would be feasible, practical and would not interfere too much with the daily practice of the IP. In this implementation study, we succeeded in capturing information on the factors that hinder or promote successful implementation of the checklist. We performed a context analysis prior to the implementation study and then developed an implementation strategy to ensure adequate introduction of the checklist, which permitted us to adequately tackle important obstacles to the implementation of the checklist, such as the lack of motivation and negative attitude of IPs towards the use of innovations.

**Implications for research and practice**

This study suggests that the use of the checklist to aid in the determination and reporting of RTW-relevant factors in the daily practice of IPs is feasible, and the use of the checklist has the potential to improve the work ability assessment of employees on long-term sick leave. However, it may be necessary to adapt the checklist to meet the needs of more of the users by, for example, developing a more practical and digital version of the checklist. The present results suggest that training and feedback on the use of the checklist for IPs are needed to be able to use the checklist correctly. The training should preferably be followed by an evaluation study. Future research should also focus on strategies that promote sustainability of the implementation.
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Appendix

Checklist of factors relevant to return to work (RTW)
A checklist for use in the identification of factors liable to promote or inhibit RTW of long-term sick-listed employees

Introduction:
This checklist is intended to help insurance physicians making work ability assessments to identify and record factors that are liable to promote or inhibit the RTW of long-term sick-listed employees. Information about such factors can promote evidence-based decision-making and transparent insurance-medical reporting.

A recent nationwide study of 102 insurance physicians found that 80% of them regarded consideration of the following factors as important for workforce participation and that more than 50% of the physicians regarded consideration of the factors relevant to their work ability assessments:

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

- Factors liable to promote RTW:
  1. Positive attitude of sick-listed employee towards resuming work
  2. Motivation of sick-listed employee to RTW
  3. RTW vocational rehabilitation provided from an early stage

How to use this checklist
- The checklist of factors relevant to work reintegration lists the nine factors referred to in the introduction. A definition of each factor is provided beneath its listing.
- To establish whether a given factor is present in a particular case, you may start by posing a question. A suitable question for starting your consideration of each factor is provided in the checklist below the factor's definition. The question is designed to
help you determine the extent to which the factor is relevant to a particular client's circumstances.

- In the column to the right of the starting question are a number of statements relevant to the factor. The statements reflect the latest medical insights and knowledge concerning the factor.
- Establishing whether the statements are valid in the client's case will yield information to help you to answer the starting question.
- The observation that an inhibiting factor is present can be the starting point for specific advice aimed at its elimination or mitigation.
- The observation that a promoting factor is present facilitates the identification/reinforcement of things that promote work reintegration.
- The factors present in a given case can be identified in your evaluation, where you can also indicate how they have been reflected in your assessment.
FACTORs LIABLE TO INHIBIT RETURN TO WORK

1. INEFFICIENT COPING STYLE REGARDING RTW

*(Failure to cope with limitations in a way conducive to work reintegration)*

**Does the client use inefficient coping strategies that hinder RTW?**

- Client is focused on disease/treatment, rather than on work reintegration.
- Client does not seek social support or help with problems during work reintegration.
- Client cannot find any suitable way of working with his/her disease.
- Client is waiting to see what will happen, not attempting to steer events, not seeking solutions.
- Client appears to avoid problematic situations by withdrawing from obligations/working arrangements.
- Client is daunted by work reintegration, is preoccupied by the difficulties of reintegration, is withdrawn, is worried often, and is negative about work reintegration.
- Client has a passive/dependent attitude where reintegration is concerned, does not take the initiative and waits for others to take the lead of his/her work reintegration.
- Client puts responsibility for his/her work reintegration outside himself/herself.

2. INABILITY TO ACCEPT LIMITATIONS

*(Problems accepting the physical or mental limitations associated with illness or disability)*

**Does the client have difficulty accepting his/her disease and the associated limitations?**

- Client cannot cope with the problems associated with his/her disease.
- Client hasn't learnt to live with the limitations associated with his/her disease.
- Client has not learnt to accept the limitations associated with his/her disease.
- Client appears not to have accepted the limitations.
### 3. NEGATIVE ILLNESS PERCEPTIONS

(*Negative perceptions of the disease, that hinder work reintegration*)

**Does the client have negative illness perceptions that hinder RTW?**

- Client believes that his/her disease affects his/her life so much that working is impossible.
- Client appears preoccupied with his/her disease.
- Client does not expect treatment to yield significant improvements.
- The disease has a negative effect on the client's mood.
- Client believes that he/she cannot go back to work until the symptoms of his/her disease have gone.
- Client thinks that that he/she should not go back to work because work has made his/her problems worse.
- Client appears more focused on his/her disease/limitations than on activities that might promote RTW.

### 4. SECONDARY GAIN OF ILLNESS

(*Looking for the external benefits of one's present disease*)

**Is RTW hindered by secondary gain of illness?**

- There are inconsistencies in the information yielded by the examination, and there are signs that external advantages may play a role in the perpetuation of the client's problems. The limitations described by the client are not in proportion to the seriousness of his/her disease.
- Client expects advantages in delaying RTW and consequently does not take advantage of
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| 5. COGNITION AND/OR BEHAVIOUR THAT HINDER RTW |  
|-----------------------------------------------|---|
| (Ideas/behaviour that interfere with the reintegration process) |  
| Is RTW hindered by work inhibiting behaviour and/or work inhibiting beliefs? |  
| Client believes that his/her health problems will worsen if he/she goes back to work. |  
| Client believes that working could damage his/her health. |  
| Client believes that he/she should not have to work with his/her present health problems. |  
| Client believes that he/she is not able to work with his/her present health problems. |  
| Client believes that he/she cannot work until his/her health problems have been treated. |  
| Client believes that rest is vital to his/her recovery. |  

| 6. SICKNESS BEHAVIOUR-PROMOTING ATTITUDE AND/OR INAPPROPRIATE ADVICE FROM TREATING PHYSICIANS REGARDING RTW |  
|---------------------------------------------------------------|---|
| (Advice from treating physicians that interferes with RTW) |  
| Has the client been given advice by his/her treating physicians that can hinder RTW? |  
| Client has been advised by a treating physician not to go back to work until his/her health problems have been resolved or brought under control. |  
| Client has been advised by a treating physician not to resume his/her previous work. |  
| Client has been advised by a treating physician not to go back to work until his/her treatment is complete. |  
| Client has been advised by a treating physician to rest, without receiving further information about reactivation or work reintegration. |
## FACTORS LIABLE TO PROMOTE RTW

### 1. POSITIVE ATTITUDE TOWARDS RTW

*(Positive attitude towards returning to previous work or doing other work)*

**Does the client have a positive attitude towards RTW?**

- Having a job is important to the client and in the last six months, client has tried to return to work/applied for jobs/actively sought reintegration (e.g., looked for information, made contact with vocational rehabilitation counsellors, employer, occupational physician, etc.).
- Work means much to the client (besides income), and client performs actions that are likely to facilitate reintegration (training, internships, work experience, etc.).
- Client considers it likely that he/she can return to work, and client is reasonably positive about reintegration.
- Client is convinced that he/she can go back to his/her old job or do other work, and client is very confident about work reintegration.

### 2. RTW VOCATIONAL REHABILITATION PROVIDED FROM AN EARLY STAGE

*(Reintegration activities start as soon as the client's health allows)*

**Has appropriate RTW-action been taken to promote work reintegration?**

- Reintegration programme is proceeding adequately and reintegration is in sight.
- Client has made sufficient use of reintegration opportunities.
- Client began seeing vocational rehabilitation counsellors at an early stage.
- Reactivation began promptly and is making steady progress.

### 3. MOTIVATION OF SICK LISTED EMPLOYEE TO RTW

*(Client's behaviour, views or actions demonstrate motivation)*

- In the last six months, client has performed actions aimed at reintegration (e.g., taken training, consulted occupational physician, vocational rehabilitation counsellors/ job coach, etc.).
- Client is planning to go back
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| **Is the client motivated about going back to work?** | to seek work in the coming months. |
|----------------------------------------------------------|-----------------------------------|
|                                                          | – Client is ready to make concessions to return to work (accept different work, longer commuting times, accept a lower-ranking post/lower pay, etc.). |
|                                                          | – Client says he/she often misses work. |

References (checklist)

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