Disease oriented work ability assessment in social insurance medicine
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Chapter 5

Work ability in sick-listed patients with Major Depressive Disorder

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Abstract

**Background:** Major depressive disorder (MDD) is often a chronic relapsing disease resulting in work-disability. For evaluation purposes a practical set of aspects of work ability would be helpful.

**Aims:** To identify the most important disease specific aspects of work ability for sick-listed employees with MDD.

**Methods:** An experts brainstorming session identified the specific abilities that were thought to be associated with work ability in sick-listed employees with MDD and that could also be associated with the items of the Hamilton Rating scale for Depression (HRSD). Sixty-four insurance physicians (IPs) were then selected to participate in a two-round Delphi study. The aim of the first Delphi round was to identify the abilities that were thought to be important by at least 80% of the IPs. In the second Delphi round, the abilities ranked in the top ten by at least 55% of the IPs were identified as being the most important items.

**Results:** Sixty-one IPs participated in the two Delphi rounds. The most important abilities to be evaluated in work ability evaluation for sick-listed employees with MDD were: to take notice; to sustain attention; to focus attention; to complete operations; to think in a goal-directed manner; to remember; to perform routine operations; to undertake structured work activities; to recall; and to perform autonomously.

**Conclusions:** According to 55% of the IPs, there were ten important aspects of work ability that have to be considered in a work ability evaluation of sick-listed employees with MDD.
Introduction

Major depressive disorder (MDD) is a common disease\(^1\). In 2003, 7% of the Dutch population of working age (12-month prevalence) suffered from MDD\(^2\). In many cases MDD is a relapsing and chronic disease\(^1\). Symptoms of MDD such as loss of energy, diminished interest, diminished ability to think or concentrate and psychomotor agitation may be responsible for poor functioning. Because of the high prevalence of MDD, its relapsing and chronic course and the residual symptoms\(^4\), it is not difficult to imagine that MDD results in much disability in society. MDD is associated with productivity loss and absenteeism\(^5\). When an absent employee with MDD is protractedly not able to return to work, a disability pension can be considered. However, the work ability of the employee first has to be evaluated and a doctor may be asked to do this.

In the Netherlands, it is the responsibility of insurance physicians (IPs) to assess work ability, and they receive a four-year training course in order to be able to do this. Their assessment is based on an interview and examination of the sick-listed patient and, if necessary, consultation with other professionals concerned.

The term ‘work ability’ can be taken as meaning that a person’s abilities fit the demands of his job. This fit should also be lasting because work implies continuity. Therefore, work ability assessments could be based on prognostic factors that predict a lasting return to work. The assumption is that the severity of MDD interferes with the employee’s functioning at work\(^6\). Several instruments are available to measure the severity of MDD\(^7\). Those instruments, however, do not assess aspects of work ability. To our knowledge, it is not known which aspects of work ability should be evaluated by doctors in the case of sick-listed employees with MDD. In a recent systematic literature review, we were not able to identify papers that described prognostic factors for return to work in sick-listed employees with MDD\(^8\). Knowing which aspects to assess would be helpful in structuring the communication between doctor and patient about a return to work. Knowledge of these aspects would also be useful for professionals when communicating about interventions which could facilitate a return to work. Therefore, we set up a study to explore and develop consensus about those aspects. The aim of this study was to identify the most important aspects of work ability that need to be evaluated in sick-listed employees with MDD.
Methods

A Delphi study was performed in two rounds. The input for the first round was prepared using the results of an expert brainstorming session.

The participants for the brainstorming session and the Delphi study were insurance physicians (IPs). In the Netherlands, about a thousand IPs work at the National Institute for Employee Benefit Schemes. They are experts in work ability evaluation because they are registered medical specialists who are trained to assess - on a daily basis - the work ability of employees who have been sick-listed for up to two years.

At the end of 2006, a group of eight IPs from the Dutch Research Centre for Insurance Medicine in the Netherlands was invited to participate in a two-hour brainstorming session. The aim of the session was to explore aspects of work ability in sick-listed employees with MDD that could be associated with the 17-item version of the Hamilton Rating Scale for Depression (HRSD)\(^9\). The HRSD was used because it encompasses both the symptoms and severity of MDD\(^10\). First, the IPs received a form on which they had to write down the aspects of work ability they thought were associated with individual HRSD items. Next, each item with its associated aspects of work ability was discussed in the group of eight IPs. The session was recorded on tape and notes were made. The aspects of work ability mentioned were listed and thereafter discussed by the authors (FS, PK, HW, MF, and JS). Duplicates were removed. The criterion for including an item in the first Delphi round questionnaire was that the item could be seen as an aspect of work ability in terms of performable activities.

All regions of the Netherlands were adequately represented in a sample of at least 60 IPs. Thirty-five senior IPs, who worked in those regions and who were responsible for instructing IPs, were contacted by telephone. They were asked to inform two or three of their IPs who were experienced in work ability evaluation for sick-listed employees with MDD about the study. The IPs who wanted to participate received an explanatory letter, signed an informed consent form and filled in a short demographic questionnaire. Personal characteristics were required, such as age, gender, year of registration, years of experience and number of work ability evaluations for sick-listed employees with MDD per year. Only the IPs who had performed at least five work ability evaluations for sick-listed employees with MDD in the past year were included.

For the first Delphi round five versions, containing randomly listed items of the brainstorming session, were generated using Research Randomizer (www.randomizer.
org) thus ensuring the items at the beginning of the list would not get the most attention when read. In the last week of January 2007, the IPs received one of the five versions of the first-round questionnaire by email.

Every item of the questionnaire had to be judged by the IPs as “important”, “not important” or “I do not know” for assessing work ability for sick-listed employees with MDD. The IPs could also mention items they considered were missing from the questionnaire or they could make other comments. If the completed questionnaire was not returned within two weeks of the questionnaire being sent, the IP was reminded first by email and thereafter by telephone that he should return the questionnaire.

The returned questionnaires of the first Delphi round were filed and the answers were analysed in SPSS 13.0. The most relevant items were searched for. ‘Important’ was defined as: “at least 80% of the IPs should judge the item of the questionnaire as important”\(^\text{11}\). Comments and self-reported items were discussed in the research group (FS, PK, HW, MF, and JS). Those items were discussed until consensus was reached on whether to insert the item in the questionnaire of the second round or not.

A questionnaire of the most important items and the inserted comments from the first round of the Delphi was developed for the second Delphi round. Five versions were made using Research Randomizer (www.randomizer.org). In the second week of March 2007, the IPs who participated in the first round received one of the five versions of the second-round questionnaire by email. The IPs had to rank the items according to importance for assessing work ability in sick-listed employees with MDD. The most important item should be given rank 1, the runner-up rank 2 and so on.

If the completed questionnaire was not returned within two weeks of the questionnaire being sent, the IP was reminded first by email and thereafter by telephone that he should return the questionnaire. The returned questionnaires were filed and the given ranking of the second Delphi round was analysed in SPSS 13.0. The most relevant items were searched for. ‘Relevant’ was defined as: “those items that were ranked in the top ten by more than 55% of the IPs”\(^\text{11}\).

**Results**

Using the forms, notes and tapes from the brainstorming session, 104 items were listed that the experts thought should be associated with work ability. After removing duplicates and applying the inclusion criterion, a list of 59 items remained. These items were used in the first Delphi round questionnaire.
Sixty-four IPs, who came from all regions of the Netherlands and who had performed at least five work ability evaluations for sick-listed employees with MDD during the past year, were willing to participate in the first Delphi round. Forty-one percent were female and the mean age was 48 years (Standard deviation (Sd) = 8; range 31-60). They had worked as an IP for between 4 and 32 years (mean 15; Sd = 8;) and performed on average 52 MDD work ability evaluations per year (Sd = 29; range 5-150).

Sixty-three IPs (98%) returned the first-round questionnaire. Of the 59 items, 16 were scored by at least 80% of the IPs as important. “To be able to solve problems” was frequently self-reported as an extra item by the IPs. Because such an item was not included in the first-round questionnaire, consensus was reached in the research group (FS, PK, HW, MF, and JS) to insert it as an extra item for the second round. The 17 items for the second round are presented in the first column of table 1. These abilities vary in kind from aspects of mental functioning like attention, thinking and memory to more specific aspects of activity and participation like handling pressure of work, handling work tempo, undertaking structured work activities, and performing autonomously. In table 1, the second column provides examples for the abilities at stake.

Sixty-one IPs out of 63 (97%) returned both the second-round and the first-round questionnaires. As table 1 shows, ten items are rated as relevant, according to the definition that at least 55% of the IPs should rank their item in the top ten. Table 1 also shows that the top three items, which according to IPs should be considered in work ability evaluations of sick-listed employees with MDD, are all related to attention functions.

Discussion

Our study identified ten aspects of work ability that should be evaluated in sick-listed employees with MDD. These were: to be able to take notice; to be able to sustain attention; to be able to focus attention; to be able to complete operations; to be able to think in a goal-directed manner; to be able to remember; to be able to perform routine operations; to be able to undertake structured work activities; to be able to recall; and to be able to perform autonomously.

There are no absolute criteria which can guarantee the reproducibility of Delphi studies. The questionnaires used, the definition of consensus, the panel size, the type of experts and loss to follow-up should be considered in this respect. We think
this Delphi study is reproducible because there was a wide range of abilities for consideration in the first-round questionnaire, the definitions of consensus were clear, a large group of experts who perform work ability evaluation on a daily basis were included and the response rate was very high.

We created a first-round Delphi questionnaire by requiring the experts to apply the Hamilton Rating Scale for Depression (HRSD). The HRSD is a frequently used instrument to measure and monitor the severity of MDD. The HRSD encompasses the full spectrum of symptoms and severity of MDD. By associating the items of the HRSD with aspects of work ability, we produced a set of items that is related to both the full spectrum of symptoms and severity of MDD and to work ability. Because MDD is one of the leading causes of disability worldwide, we think a disease-specific set of items to evaluate aspects of work ability could be of great practical value in general practice. Moreover, MDD is also one of the leading causes of work disability.

Because MDD is in many cases a chronic relapsing disease, patients with MDD are likely to consult the doctor who is treating them. As symptoms of MDD interfere with a person’s functioning in general, their functioning at work is an important issue. Patients with MDD may ask their doctor if they can work. However, MDD is not an unequivocal disease. MDD is diagnosed when five or more symptoms have been present for at least two weeks and when this represents a change from previous functioning. One of the symptoms that should certainly be present is a depressed mood, or loss of interest or pleasure. The other symptoms include: weight loss or gain; insomnia or hypersomnia; psychomotor retardation or agitation; fatigue or loss of energy; feelings of worthlessness; diminished ability to think or concentrate; and recurrent thoughts of death. There are many combinations of symptoms possible and it is not immediately clear how the symptoms may be related to work ability. The symptoms are associated with disabilities whereas in work ability evaluation, the ability to function at work has to be assessed. This study identified ten relevant abilities which need to be evaluated when assessing work ability in sick-listed employees with MDD. If the set of items found in this study is used, it may no longer be necessary to transform symptoms of depression into disabilities and the disabilities into the ability to function at work. The list of items can therefore be considered as helpful in structuring the consultation when assessing the work ability of sick-listed patients with MDD without it being too time-consuming.

The items found in this study may also be applicable to the interventions in the workplace that are needed to overcome the diminished abilities of a sick-listed employee. For instance, support may be needed when the employee is not able to perform as
Table 1  Important and relevant aspects of work ability and percentage of IPs (N=61) who ranked these aspects in the top ten. Grey column: 55% is the pre-determined cut-off for consensus.

<table>
<thead>
<tr>
<th>Ability to:</th>
<th>Examples of ability</th>
<th>Percentage of IPs that ranked the item in the top 10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>&gt;80%  &gt;67%  &gt;60%  &gt;55%  &gt;50%  &gt;33%</td>
</tr>
<tr>
<td>take notice</td>
<td>e.g. a truck driver should be able to notice a car accident that happens in front of him</td>
<td>x      x      x      x      x      x</td>
</tr>
<tr>
<td>sustain attention</td>
<td>e.g. a bus driver should be able to remain alert enough to drive in the correct lane even on a long, uninteresting road in the late afternoon</td>
<td>x      x      x      x      x      x</td>
</tr>
<tr>
<td>focus attention</td>
<td>e.g. a teacher should be able to concentrate on the subject of the lesson even when the students are noisy</td>
<td>x      x      x      x      x      x</td>
</tr>
<tr>
<td>complete operations</td>
<td>e.g. a baker should not only be able to put the dough in the oven but also to concentrate on, manage and finish the whole baking process up to removing the bread from the oven.</td>
<td>x      x      x      x      x      x</td>
</tr>
<tr>
<td>think in a goal-directed manner</td>
<td>e.g. an anaesthetist working in an operating theatre should first stabilise relevant parameters in the patient before filling in forms or performing other functions with a lower priority</td>
<td>x      x      x      x      x      x</td>
</tr>
<tr>
<td>remember</td>
<td>e.g. a hotel porter should be able to remember where he has put his guests’ luggage</td>
<td>x      x      x      x      x      x</td>
</tr>
<tr>
<td>perform routine operations</td>
<td>e.g. a school nurse should be able to vaccinate hundreds of children a day and to do this in the standard and safe way she has learned</td>
<td>x      x      x      x      x      x</td>
</tr>
<tr>
<td>undertake structured work activities</td>
<td>e.g. a bricklayer should be able to lay bricks exactly according to a given wall design</td>
<td>x      x      x      x      x      x</td>
</tr>
<tr>
<td>recall</td>
<td>e.g. a medical doctor must be able to recall acquired knowledge in order to evaluate the patient’s complaints</td>
<td>x      x      x      x      x      x</td>
</tr>
<tr>
<td>Ability to:</td>
<td>Examples of ability</td>
<td>Percentage of IPs that ranked the item in the top 10</td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>perform autonomously</td>
<td>e.g. a general practitioner should be able to make decisions about the management of patients independently</td>
<td>&gt;80% &gt;67% &gt;60% &gt;55% &gt;50% &gt;33%</td>
</tr>
<tr>
<td>operate at speed</td>
<td>e.g. a cashier should be able to constantly work at high speed so that customers do not have to wait long</td>
<td>x</td>
</tr>
<tr>
<td>divide one’s attention</td>
<td>e.g. a taxi driver must remain alert in traffic, and at the same time be able to follow a planned route, any instructions received by mobile phone regarding the next trip, and the client’s attempts at conversation</td>
<td>x</td>
</tr>
<tr>
<td>handle pressure of work</td>
<td>e.g. a cashier should not become nervous when five clients are waiting</td>
<td>x</td>
</tr>
<tr>
<td>handle pace of work</td>
<td>e.g. a worker on a conveyor belt should be able to cope with work in a set pace</td>
<td>x</td>
</tr>
<tr>
<td>take the initiative</td>
<td>e.g. a policeman should immediately start assisting in a serious traffic accident without being asked to do so</td>
<td>x</td>
</tr>
<tr>
<td>control emotions</td>
<td>e.g. a psychologist should be able to hide personal grief when working</td>
<td></td>
</tr>
<tr>
<td>solve problems</td>
<td>e.g. Even when the client is angry, a garage mechanic should not only be able to detect what is wrong with a car, but also carry out repairs without constantly asking for help from colleagues.</td>
<td></td>
</tr>
</tbody>
</table>
autonomously as in the past. So, the list might also be helpful in communicating with any other professionals concerned with the patient’s work ability. Therefore the list is recommended for use in everyday practice by general practitioners, psychologists, psychiatrists, occupational health professionals and insurance physicians when the work ability of sick-listed patients with MDD is assessed.
References


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