Return to work after acquired brain injury
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Chapter 4:
Factors influencing return to work experienced by people with acquired brain injury: a qualitative research study

Abstract

**Purpose:** To describe the factors experienced by adults with moderate to severe acquired brain injury (ABI) as either limiting or facilitating during the process of return to work (RTW) in order to give an advise about the vocational rehabilitation process.

**Methods:** A qualitative study was performed. Twelve adults who were working before acquiring traumatic or non-traumatic brain injury (2-3 years earlier) participated. The experiences were gathered by semi-structured interviews. The International Classification of Functioning, Disability and Health was used as a theoretical framework for the interviews and the analysis.

**Results:** The most common limiting factor was tiredness. The most common facilitating factors were the will to RTW, the ongoing recovery, and the knowledge and support of the employer, colleagues, occupational physician, and occupational specialist.

**Conclusions:** Different aspects were experienced as being important during the process of RTW after ABI. These aspects should be kept in mind during the process of RTW to make the outcome as successful as possible. It is advised to pay special attention to the recovery opportunities of an individual, to inform the employer, colleagues, occupation physician, and the occupational specialist about ABI, and to support people with ABI for long time periods. An important role can be played by the rehabilitation centre.
Factors influencing return to work experienced by people with acquired brain injury

Introduction

Acquired brain injury (ABI), resulting from either traumatic or non-traumatic events, is known as a severely disabling disease, affecting many people of working age every year. ABI influences different aspects of life, including participation in (paid) work.\textsuperscript{1-5} According to a recent review only 40\% of the people who were working before ABI turned out to return to paid work within two years after acquiring brain injury.\textsuperscript{6} Recently, our research group performed a systematic review to reveal the prognostic factors of return to work (RTW) after ABI.\textsuperscript{7} From this review, it became clear that although many factors were investigated in different studies, nearly no strong evidence was found. In addition, it was remarkable that only medical and personal data were gathered during the stay in the hospital or during (inpatient) rehabilitation in most studies. Factors more outside the scope of a rehabilitation centre were not taken into account although, based on the results of studies in people with other diseases\textsuperscript{8,9}, it can be expected that people with ABI will face problems associated with RTW other than just medical and personal problems and those recognised by the physicians.

The experiences with the RTW of people with ABI were investigated by some earlier studies.\textsuperscript{10-12} Gilworth et al.\textsuperscript{10,11} explored personal experiences of RTW in the UK in people of working age from three months to eight years after ABI. In conclusion, factors that were experienced as influencing RTW were the invisibility of the injury, the continuing symptoms affecting their ability to do the job, a lack of information provision, advice and guidance on returning to work, and any potential changes in life roles. Rubenson et al.\textsuperscript{12} used interviews in people from Sweden with cognitive abilities resulting from traumatic or non-traumatic ABI. It was concluded that the process of RTW after ABI took a long time and that it required motivated individuals, flexible work, accommodating labour management, and prolonged environmental support. Although these three studies provided some insight into factors influencing RTW as experienced by people with ABI, some questions remained unanswered. First, it remained unclear what people who did not return to work experienced. In the study of Gilworth et al.\textsuperscript{10} and the study of Rubenson et al.,\textsuperscript{12} all participants returned to work, while it is known from earlier research that only 40\% of the people with ABI returned to work within two years after the ABI.\textsuperscript{6} Secondly, none of the studies were performed in the Netherlands. Due to differences in the social assurance system and legislation in the countries, it can be expected that the Dutch situation will differ from the situation in other countries. At last, not all aspects of the International Classification of Functioning, Disability and Health (ICF) model\textsuperscript{13} were investigated, although according to this model there is an interaction between various aspects of life: the functions and structures, activities, and participation can influence each other and can be influenced by the disease/disorder on the one hand and by external and personal factors on the other hand. It can therefore be expected that all aspects of the ICF model will influence participation, including RTW.\textsuperscript{13} However,
especially regarding the influence of external factors, little information was found in our earlier performed review\(^7\) and in the studies of Gilworth et al.\(^{10,11}\) and Rubenson et al.\(^{12}\) It is important to have insight into the experiences of RTW for people with ABI because this can give input for the focus of the (vocational) rehabilitation process. If the experiences are known, the process of (vocational) rehabilitation can be adapted to the needs of people with ABI itself. This leads to a client-centred health care process, hopefully improving the RTW of people with ABI. Therefore, the aim of the current study is to describe the factors that were experienced by adults with moderate to severe ABI as either limiting or facilitating during the process of RTW, using the ICF model as a theoretical framework, in order to give an advise about the vocational rehabilitation process. Taking the questions into account that remained unanswered after earlier performed research, only people from the Netherlands will be included, irrespective of their outcome on RTW.

**Methods**

Because we were interested in the experiences of the participants, the study was designed as a qualitative study in which interview techniques were used.

**Participants**

A sample of people with (according to the internal rules of the rehabilitation centre) moderate to severe ABI who had been admitted to and discharged from inpatient rehabilitation between 1 January 2006 and 31 December 2007 in a Dutch rehabilitation centre were asked in May 2009 to participate through a letter signed by their inpatient medical practitioner. In this rehabilitation centre, a distinction between three groups of people with ABI was made based on the cause and main consequences of ABI: 1) people with non-traumatic ABI who experience mainly physical problems, 2) people with non-traumatic ABI who experience mainly cognitive problems, and 3) people with traumatic ABI who could have experienced both physical and cognitive problems as main problem. The sampling was theoretical.\(^ {14}\) To improve the chance that a broad spectrum of relevant influencing factors independent of the cause of injury are found, from all three groups people were asked to participate if they fulfilled the inclusion criteria that they: 1) had a non-progressive, acute brain injury acquired by a traumatic or non-traumatic cause, 2) were aged between 18 and 60 years at the time of ABI and at the time of inclusion, 3) had sufficient knowledge of the Dutch language to be able to understand the goal of the study and the testing methods, 4) had been working before their ABI, and 5) were suitable for vocational rehabilitation according to their inpatient medical practitioner. All subjects participated on a voluntary basis. A step-wise method of inclusion was chosen: first, three people of each group were interviewed, leading to nine cases. Finally fourteen
Factors influencing return to work experienced by people with acquired brain injury

Subjects were contacted in order to reach this first sample of nine cases. Of these fourteen subjects nine were willing to participate, one person gave a reaction in which he said that he did not want to participate (but he did not want to give a reason for not participating), and four subjects did not respond at all (all were receiving rehabilitation mainly because of cognitive consequences of ABI). Because no data saturation was reached (meaning that no new factors were elicited during the last interview as compared with the earlier performed interviews), three other subjects (one from each group) were asked to participate. All subjects were willing to participate but one person gave a delayed reaction when a fourth subject was asked (and willing) to participate and data saturation was already reached. No new factors were mentioned during the last two interviews so saturation was reached after interviewing twelve subjects (nine men and three women) and no new sample of three people has to be selected. Because of the cognitive problems that were experienced by the people of groups 2 and 3, a direct relative (spouse, child, parent, brother, or sister) of those people was asked to participate during the interviews as well.

Procedure
Because of the possible cognitive impairments, a form was sent to the participants before the interview in order to gather demographics and work characteristics. By sending the questionnaire before the interview, the participants were able to collect the required information without being pressed for time and, if necessary, with help of a relative. All participants were interviewed face-to-face at the participants’ homes or at the rehabilitation centre, according to the individual preference of each participant. All interviews were audio-recorded upon agreement of the participants. Before the start of the interviews, the purpose of the study was explained and the use of the digital voice recorder was revealed. In addition, it was made clear that all information was treated as confidential and that the participant could not be traced by name from the analyses or reports. After this explanation, informed consent forms were signed by the participants. In cases where a relative was present during the interview, the relative was free to answer the questions of the interview. In cases of inconsistencies between the participant and the relatives, time was given to see whether they would reach a consensus by themselves. If they did not reach a consensus, both answers were registered. The interview was pre-tested for usability by means of a pilot interview. The interviewer kept ‘field notes’ during or shortly after the interviews to describe the context of the interviews, the condition of the participants and the researcher, and to register remarkable events. Also reported in the field notes was whether the participant with ABI used the help of a relative or not. If the interviewer experienced disturbing factors during an interview that could have influenced the responses of the participant (e.g. interruptions by telephone or door bell, etc.), the participants were asked at the end of the interview, whether they felt disturbed or not. If the participant felt disturbed, the
interview was not included for further analysis. All interviews were conducted by one researcher (JvV) and were semi-structured.

**Structure of the interviews**
The interviews were guided by a topic list (Appendix). The first part of the interview started with an open-ended question in which people were asked to rank the (maximum) three most limiting and (maximum) three most facilitating factors they experienced during the process of RTW. The second part of the interview was structured according to the model of the International Classification of Functioning, Disability and Health. As was mentioned before, according to the ICF model, RTW could influence and be influenced by the disease/disorder, body functions and structures, activities, and external and personal factors. It is expected that all of those components are affected by ABI (the disease/disorder in the current study), resulting in limiting and facilitating factors of RTW in all those components. Therefore, we used the ICF-model as a grid for the interviews and analysis. The structure of the interview is given in the appendix. The mentioning of each component of the ICF model was preceded by an open-ended question. People were free to mention the factors they experienced as improving or limiting. However, to make sure that some factors known from the international literature to possibly influence RTW in people with ABI or other severely disabling disorders like spinal cord injury were discussed, a list of fixed factors was mentioned during the interview and helped to structure the interview. It aimed to keep the duration of the interviews within one hour.

**Data analysis**
Analyses for limiting and facilitating factors were conducted in accordance with the COREQ criteria list and based on the content analysis. The audio-recorded interviews were transcribed verbatim (raw data). The transcriptions were each coded and analysed by one researcher (JvV). To organise and manage the data, the MAXQDA software [VERBI, Germany] was used. For the data analysis, the transcripts were read to first get a general impression of the data. After this, the text was segmented into meaningful units, which were inductively given an open code that reflected the theme of the unit. These codes were formulated in vivo, based on the answers of the participant. The open codes are listed and structured during the next phase of the analyses. During this phase, the units with the open codes were clustered by some main codes, distracted from the in vivo formulated codes. Finally, the units were combined and categorised according to the components of the theoretical framework: the ICF model. After this, the research questions were answered based on the categorised units of the text.

To improve the reliability of the study, the first three transcriptions (one of each group) were read, open-coded and discussed by the interviewer and one of the other authors (JS). In case of disagreement, a third author was consulted to reach consensus (MF). The categorisation of the coded units into the components of the ICF was also discussed.
by these three people. Because of the possible cognitive problems of the participants, the participants themselves were not asked to check the transcriptions.

Results

Participants
Twelve subjects participated in the study. The mean age of these twelve participants was 52.1 (+/- 6.7) years and mean time since injury was 32.3 (+/- 5.1) months. Two participants were not able to fill in the questionnaire by themselves, one because of vision problems and one because of problems using the dominant arm. In both cases the interviewer read the questions aloud and wrote down the answers. During the interview of four subjects (participant 2, 6, 8, and 12) a direct relative were present. In none of these interviews important disagreements were heard. All participants were working full-time before injury (median number of hours: 40, ranging from 36-80 hours a week). After injury, three participants were working full-time (respectively 40, 65, and 80 hours a week). Four participants were working part-time in paid jobs (median number of hours: 16.5, ranging from 3-30 hours a week), two participants were working part-time as volunteers (respectively 2 and 18 hours a week), and three participants were not working at all. The subject and work characteristics are given in table 1. None of the participants received a vocational rehabilitation programme during rehabilitation in the rehabilitation centre.

Limiting and facilitating factors of RTW
Twelve participants were interviewed in order to get an overview of the factors they experienced as either limiting or facilitating during their process of RTW. Except one, all participants experienced more than one factor as limiting, leading to 57 limiting factors. Thirty-three factors were identified as facilitating factors. Overviews of all mentioned limiting and facilitating factors are given in, respectively, table 2 and table 3. The most important limiting and facilitating factors, listed as such by the participants during the first part of the interview, will be described in more detail.

Limiting factors of RTW
ABI was experienced as a disabling disorder, and recovery from this takes a long time. In the opinion of four participants, the recovery takes too long. Except one, all people realised that total recovery would never be reached. Four participants stated this will make it difficult to return to their former work. Two participants acquired other serious diseases not connected to their ABI. Because of these diseases, their processes of RTW were delayed even more. Physical and/or cognitive tiredness was one of the
### Table 1: Subject and work characteristics

<table>
<thead>
<tr>
<th>Participant</th>
<th>Gender</th>
<th>Age</th>
<th>Cause of injury</th>
<th>Time since injury (months)</th>
<th>Kind of work</th>
<th>Type of work</th>
<th>Number of hours a week</th>
<th>Number of days a week</th>
<th>Kind of work</th>
<th>Type of work</th>
<th>Number of hours a week</th>
<th>Number of days a week</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Woman</td>
<td>43</td>
<td>Non-traumatic</td>
<td>30</td>
<td>Paid, employee</td>
<td>Office and administrative (coordinating)</td>
<td>36</td>
<td>5</td>
<td>Paid, employee</td>
<td>1) Administrative (coordinating)</td>
<td>15</td>
<td>2 till 4</td>
</tr>
<tr>
<td>2</td>
<td>Man</td>
<td>57</td>
<td>Traumatic</td>
<td>23</td>
<td>Paid, self-employed</td>
<td>Construction</td>
<td>40</td>
<td>5</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Man</td>
<td>53</td>
<td>Non-traumatic</td>
<td>32</td>
<td>Paid, self-employed</td>
<td>Transport</td>
<td>80</td>
<td>7</td>
<td>Volunteer (in a day center farmhouse)</td>
<td>--</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Man</td>
<td>59</td>
<td>Non-traumatic</td>
<td>31</td>
<td>Paid, self-employed</td>
<td>Construction</td>
<td>50</td>
<td>6</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Man</td>
<td>52</td>
<td>Non-traumatic</td>
<td>33</td>
<td>Paid, employee</td>
<td>Technical</td>
<td>40</td>
<td>5</td>
<td>Paid, employee</td>
<td>Technical</td>
<td>40</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Man</td>
<td>41</td>
<td>Traumatic</td>
<td>37</td>
<td>Paid, employee</td>
<td>Office and administrative (coordinating)</td>
<td>40</td>
<td>5</td>
<td>Paid, employee</td>
<td>Office and administrative</td>
<td>30</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>Man</td>
<td>58</td>
<td>Non-traumatic</td>
<td>34</td>
<td>Paid, employee</td>
<td>Warehouse worker</td>
<td>40</td>
<td>5</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Man</td>
<td>41</td>
<td>Traumatic</td>
<td>23</td>
<td>Paid, self-employed</td>
<td>Stock-breeding</td>
<td>80</td>
<td>7</td>
<td>Paid, self-employed</td>
<td>Stock-breeding</td>
<td>80</td>
<td>7</td>
</tr>
<tr>
<td>9</td>
<td>Man</td>
<td>53</td>
<td>Traumatic</td>
<td>39</td>
<td>Paid, self-employed</td>
<td>Health care</td>
<td>65</td>
<td>6</td>
<td>Paid, self-employed</td>
<td>Health care</td>
<td>65</td>
<td>6</td>
</tr>
<tr>
<td>10</td>
<td>Woman</td>
<td>54</td>
<td>Non-traumatic</td>
<td>33</td>
<td>Paid, employee</td>
<td>Office and administrative</td>
<td>36</td>
<td>5</td>
<td>Volunteer</td>
<td>--</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Woman</td>
<td>59</td>
<td>Non-traumatic</td>
<td>37</td>
<td>Paid, employee</td>
<td>Office and administrative</td>
<td>40</td>
<td>5</td>
<td>Paid, employee</td>
<td>Office and administrative (assisting)</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Man</td>
<td>55</td>
<td>Non-traumatic</td>
<td>36</td>
<td>Paid, employee</td>
<td>Construction (coordinating)</td>
<td>40</td>
<td>5</td>
<td>Paid, employee</td>
<td>Office and administrative (coordinating)</td>
<td>30</td>
<td>3.5</td>
</tr>
</tbody>
</table>
### Table 2: Limiting factors structured according to the ICF model

<table>
<thead>
<tr>
<th>External factors – work related</th>
<th>Functions and structures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work environment</td>
<td>Having difficulties with vision</td>
</tr>
<tr>
<td>No changes in the workplace</td>
<td>Having difficulties with hearing</td>
</tr>
<tr>
<td>Lacking support of colleagues</td>
<td>Cognitive and physical tiredness</td>
</tr>
<tr>
<td>Lacking support of employer</td>
<td>Physical factors</td>
</tr>
<tr>
<td>Alternative job</td>
<td>Physical impairments</td>
</tr>
<tr>
<td>Work duration</td>
<td>Stiffness of the body</td>
</tr>
<tr>
<td>Job content</td>
<td>Loss of muscle strength</td>
</tr>
<tr>
<td>Stress at the workplace</td>
<td>Balance problems</td>
</tr>
<tr>
<td>Workload</td>
<td>Impairments of the upper extremities</td>
</tr>
<tr>
<td>No transport available / difficulties to transport</td>
<td>Impairments of the lower extremities</td>
</tr>
<tr>
<td>Not enough or restricting assistance of work related specialists</td>
<td>Loss of energy</td>
</tr>
<tr>
<td></td>
<td>Being less fit than before injury</td>
</tr>
<tr>
<td></td>
<td>Feeling pressure in the head</td>
</tr>
<tr>
<td><strong>External factors – not directly related to work</strong></td>
<td>Cognitive impairments</td>
</tr>
<tr>
<td>Financial situation of the world</td>
<td>Aphasia</td>
</tr>
<tr>
<td>Law and legislation</td>
<td>Having difficulties with talking</td>
</tr>
<tr>
<td>No acceptance of relatives that one is able to work again</td>
<td>Having difficulties with memory</td>
</tr>
<tr>
<td>Insufficient knowledge of other people about ABI</td>
<td>Having difficulties with attention</td>
</tr>
<tr>
<td>Interest of patients/clients</td>
<td></td>
</tr>
<tr>
<td>Timed needed for travelling</td>
<td></td>
</tr>
<tr>
<td><strong>Disease/disorder</strong></td>
<td>Activities</td>
</tr>
<tr>
<td>Insufficient or slow recovery over time</td>
<td>Physical activities</td>
</tr>
<tr>
<td>Acquiring another disease/disorder</td>
<td>Having difficulties to walk</td>
</tr>
<tr>
<td>Invisibility of the injury</td>
<td>Having difficulties climbing stairs</td>
</tr>
<tr>
<td>Incurable damage</td>
<td>Having difficulties raising a leg</td>
</tr>
<tr>
<td></td>
<td>Having difficulties standing</td>
</tr>
<tr>
<td><strong>Personal factors</strong></td>
<td>Cognitive activities</td>
</tr>
<tr>
<td>Changed personality</td>
<td>Having difficulties to communicate</td>
</tr>
<tr>
<td>Changed experience about work strain</td>
<td>Not being able to perform dualtasks</td>
</tr>
<tr>
<td>Problems accepting what happened and that things changed</td>
<td>Not being able to take initiatives</td>
</tr>
<tr>
<td>Not being able to open oneself</td>
<td>Decreased learning capacity</td>
</tr>
<tr>
<td>Not getting motivated</td>
<td>Having difficulties to plan</td>
</tr>
<tr>
<td>Level of education</td>
<td>Low speed of working</td>
</tr>
<tr>
<td>High age</td>
<td>Having difficulties switching attention</td>
</tr>
<tr>
<td></td>
<td>Having difficulties keeping the overview</td>
</tr>
</tbody>
</table>
consequences that was perceived as an important limiting factor of RTW by ten participants. One participant stated:

‘My tiredness influences everything. Trying to concentrate makes me tired, calculating makes me tired, talking makes me tired, so it influences everything.’ (Participant 1)

Another participant said:

‘I recently started to work as a volunteer. I am working two hours each Tuesday morning but it influences the biggest part of the week. On Monday I think I should not do too much today because I have to work tomorrow. Tuesday afternoon I am totally exhausted. Wednesday I need to recover from the two hours of work I did on Tuesday.’ (Participant 10)

Both physical and cognitive consequences of ABI were experienced as limiting RTW. The most important physical consequences were problems with vision or hearing, feeling pressure in the head, a loss of muscle strength, limited balance, limited energy and physical fitness, and impairments of the lower and/or upper extremities.

‘My double vision and my balance problems are limiting me. I cannot perform my work as a painter. […] Someone has to check the painting I did. I cannot see if I covered every place, for example. […] Because of my balance problems I cannot climb and stand on a stepladder. So I am not able to paint the upper part of a room or house, for example.’ (Participant 2)

Experienced cognitive limiting factors were aphasia and problems concentrating. As a result, participants perceived difficulties switching their attention and performing dual tasks and having low working speeds. As a result, high workloads or a lot of stress or rush at the workplace made it difficult to return to work. People could not concentrate because of the rush, for example.

‘I can manage to be on the telephone and making notes at the same time. However, if someone comes to my desk at the same time and asks me something, it is getting difficult. If a second person comes to my desk, it is over and I have to start over again. Therefore, I could not perform my old job as a chief.’ (Participant 6)
Factors influencing return to work experienced by people with acquired brain injury

Other work-related factors that were mentioned as important limiting factors were not being allowed by regulations to drive a car and the lack of knowledge and support from employers, colleagues, and specialists like occupational specialists or occupational physicians.

‘...my employer, the vocational specialist, and the occupational physician never had dealt with people with ABI before. They were asking me what to do because they had no experience. Well, I did not have experience either. How could these people be able to help me?’ (Participant 1)

Facilitating factors of RTW

According to almost all participants (n=10), motivation and a strong will to return to work influenced their RTW.

‘After acquiring my brain injury, I wanted to go back to my own work. But I experienced that I was not able to perform my former job anymore. That brought a lot of sorrow, but I have accepted it now. For me, it does not matter anymore to what kind of job I will return to. I will also accept more simple work.’ (Participant 10)

Seven people mentioned that the ongoing recovery process over time influenced their RTW. Although all people had moderate to severe ABI, two people experienced hardly any problem a few months after their ABI. They were able to return to their former jobs without many problems. The other people experienced slower recoveries over time. Some of them were still experiencing recovery at 3-4 years after injury. This eventual recovery facilitated the RTW.

‘After I came home from the rehabilitation centre there were days during which I didn’t want to do anything. I couldn’t do that of course, cause I am a farmer and I needed to feed and milk my cows, but I really didn’t want to do anything. But now, few months later, I am recovering and I don’t have days like that anymore. The recovery takes a lot of time, but there is still recovery. I even want to work again.’ (Participant 8)

Support from colleagues was reported to be an important facilitating factor in those who returned to work. The colleagues were important because they performed the work when the participant was absent because of the brain injury and because they supported the participant after he or she returned to work. For four of those having bosses, the support from the employer also facilitated the process of RTW.
Table 3: Facilitating factors structured according to the ICF model

<table>
<thead>
<tr>
<th>External factors – work related</th>
<th>Functions and structures</th>
<th>External factors – not directly related to work</th>
<th>Activities</th>
<th>Personal factors</th>
<th>Disease/disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being self-employed</td>
<td>Physical factors</td>
<td>Assistance of specialists who were not directly related to work</td>
<td>Training/practising</td>
<td>Personality</td>
<td>Recovery over time</td>
</tr>
<tr>
<td>Graded exposure to work</td>
<td>No physical impairments</td>
<td>Laws and legislation</td>
<td>Cognitive activities</td>
<td>Willingness to work</td>
<td></td>
</tr>
<tr>
<td>Work environment</td>
<td>No impairments of the upper extremities</td>
<td>Relatives</td>
<td>Being able to communicate</td>
<td>Coping</td>
<td></td>
</tr>
<tr>
<td>Assistive devices or adaptations</td>
<td>Cognitive factors</td>
<td>Knowledge of other people about ABI</td>
<td>Using strategies for compensation</td>
<td>Open oneself</td>
<td></td>
</tr>
<tr>
<td>Working times</td>
<td>No cognitive impairments</td>
<td>Humour</td>
<td>Being able to copy a text by writing</td>
<td>Getting motivation from people, things, or events</td>
<td></td>
</tr>
<tr>
<td>No changes in the work place</td>
<td>Having no difficulties with memory</td>
<td></td>
<td>Being able to plan things</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support of colleagues</td>
<td>Having no difficulties with attention</td>
<td></td>
<td></td>
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<tr>
<td>Support of the employer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job contents</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Number of years working in the same workplace</td>
<td></td>
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<tr>
<td>Assistance of a work related specialist</td>
<td></td>
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<td></td>
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<tr>
<td>No problems travelling to work</td>
<td></td>
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</table>

‘Nobody was pushing me during my process of return to work. They, my boss and colleagues, allowed me to do whatever I wanted to do, no matter how long it took. I was allowed to find out which tasks I could perform and to get routine back. This helped me to return to work in the longer run.’ (Participant 12)

Another participant said:

‘My employer allowed me to adapt my working times to my possibilities. My working times are from 9.30 am till 4 pm now. […] This makes it possible to travel to my work by car without being in a traffic jam. Being in a traffic jam and having to work in addition was too exhausting for me.’ (Participant 6)
One person could not return to his former job but was working under supervision at a farmhouse. This farmhouse was specially adapted for people with (cognitive) disabilities to help them have meaningful, productive days. Because of the supervision, this participant was able to work here.

’I am working now at that farmhouse. They are specialised in working with people like me. […] If I don’t want to do certain tasks, I don’t have to. We are allowed to say which tasks we want to perform and which not.’
(Participant 3)

The assistance of the occupational physician, the occupational specialist of the Dutch Institute of Employee Benefit Schemes, and of care workers who were not directly linked to work also facilitated RTW for four people. In addition, three-fourth of the participants experienced support from their relatives. They were stimulating the participants to RTW or were assisting in performing the jobs.

The job tasks influenced the RTW according to seven participants. Routine work or easy work could be performed by most participants. Humour and not being impaired in using the upper extremities were also mentioned as important facilitating factors.

Discussion

The aim of the current study was to describe the factors experienced by adults with moderate to severe ABI as either limiting or facilitating during the process of their RTW. From the interviews, it became clear that most participants experienced problems during their process of RTW. Only one subject reported hardly any problems. The factors that were mentioned were both internal (for example, impairments of the upper or lower extremities) and external to the participants (for example, lack of knowledge and support from employers, colleagues, and specialists). Most of the mentioned factors concerning the disease/disorder, functions and structures, and activities components of the ICF model are generally known consequences of ABI. However, the influence of these consequences on (the process of) RTW is less well known. The most commonly mentioned limiting factor was tiredness. Participants stated that they were not able to do anything except working, that they were not working or were working less hours, and that they needed a longer time to recover than before their injury because of the tiredness. It is known from other studies that tiredness is a common long-term effect of ABI. In addition, it is known that important limitations in work due to fatigue have also been seen in people with other diseases. Tiredness should therefore be taken into account during the process of RTW. Another commonly mentioned limiting factor was the
incomplete and slow recovery of the results of ABI. In most people the results of the ABI will always influence their working capacity.

Not all participants were able to mention more than one facilitating factor. However, one factor was mentioned by all participants: the will to return to work. All participants stated that they really wanted to return to work. Even those who were not able to return to work almost three years post-injury were still hoping to return to work in the future. They are training for that and they said that they will keep on trying to return. Another facilitating factor that was mentioned by most participants was their ongoing recovery since acquiring their brain injury, even though the slow and incomplete recovery was mentioned as limiting. However, those who experienced a quick and more complete recovery did return to work. Those for whom the recovery took a long time were less successful in returning to work. Most participants were still experiencing recovery, even about three years post-injury. In the Netherlands, the possibilities of returning to work should be determined within two years post-injury. However, based on the results of this study, it can be discussed whether this time period is too short for people who acquire brain injury. Maybe people with ABI should be allowed to take more time to return to work. It could be necessary to think about the criteria on which the decision and the time of the decision should be based. More research is necessary to investigate this in more detail. Finally, the knowledge and support of the employer, colleagues, occupational physician, and occupational specialist played an important role for most participants. Those participants who returned to work more often reported the will of employer and colleagues to cooperate and help during and after the process of RTW as facilitating. Those who reported a lack of assistance from the employer and colleagues were less likely to return to work. It can be important to inform and coach employers and colleagues during the process of vocational rehabilitation to make the process as successful as possible. The experienced limiting factors of the current study are comparable with the results of earlier performed studies in people with ABI\(^\text{10-12}\) and of the study of Dekkers-Sánchez et al.\(^\text{21}\) in chronic work-disabled patients. Some factors seem to be important for the success of the process of RTW, independent of the disease.

Some possible limitations of the study can be found. First it can be discussed whether the use of the ICF model limited the scope of the study and, as a result, whether factors were missed. However, during the interview people were able to tell whatever they wanted to tell. It was chosen to start with an open question, asking what the participants experienced as their top three of most limiting and most facilitating factors. In addition, during data analysis codes were extracted from the data, independently of the ICF model. Only during the last phase of analysis the ICF model was used to categorise the codes. A second possible limitation of the study can be that people with cognitive problems could also have problems remembering exactly what happened during their process of RTW. However, in the current study, we were interested in the experiences of people with ABI. With this intention in mind, it is less important to know what really happened. However, it
is remarkable to see that although all participants experienced other results of their brain injuries, the limiting and facilitating factors that were mentioned were more or less the same. At least, data saturation occurred after including 12 participants. When combining the limiting and facilitating factors it can be concluded that almost all subjects reported tiredness as most limiting factor but that those who were allowed to adapt their working tasks and/or working times to their capabilities, were working less hours or had sufficient time to recover, were able to deal with this tiredness and were able to return to work. It can be expected therefore that there are possibilities to improve the process of RTW by giving attention to the recovery opportunities of an individual, defined as the situational characteristics both on and off the job that allow workers to recuperate from work effort and that diminish load effects. Support of the employer, colleagues, occupational physician, and occupation specialist is important in being able to introduce adaptations, taking the recovery opportunities into account. Knowledge about (the results of) ABI will facilitate this process and is necessary therefore. Because of the knowledge about ABI that is present in a rehabilitation centre, the rehabilitation can play an important role in improving the RTW of people with ABI. Especially because they are able to assess the consequences of the ABI for each individual and give advise about the expected work capabilities. Therefore, it is advised that attention is given to RTW during the rehabilitation process. The employer, colleagues, occupation physician, and, if necessary, the occupational specialist should be informed about ABI and the expectations about the possible consequences of it. Because of the ongoing recovery and compensation over time that is experienced by some subjects, it is also advised that people with ABI should be supported for long time periods. The capabilities of the person with ABI and the work tasks should be evaluated on a regular basis to investigate whether they still fit. Supported employment, an intervention that has been demonstrated to be effective in increasing employment in people with ABI, is recommended therefore. Overall, the process of RTW after ABI turned out to be a very complex process in which different aspects were experienced as being important. These aspects should be kept in mind during the process of vocational rehabilitation to make the outcome as successful as possible.

Conclusion

The participants of our study experienced different aspects as being important during the process of RTW after ABI. These aspects should be kept in mind during the process of RTW to make the outcome as successful as possible. It is advised to pay special attention to the recovery opportunities of an individual, to inform the employer, colleagues, occupation physician, and the occupational specialist about ABI, and to
support people with ABI for long time periods. An important role can be played by the rehabilitation centre.
Factors influencing return to work experienced by people with acquired brain injury

References


Appendix: Topic list of the interview

1. Introduction

2. General questions
   - Paid work at the moment
   - Tried to get back in (another) job after ABI
   - Three most limiting factors during the process of RTW?
   - Three most facilitating factors during the process of RTW?

3. External factors
   - Limiting / facilitating factors directly related to work
     For example:
     - Job content
     - Accessibility of the workplace
     - Hours working
     - Support from employer and colleagues
     - Vocational counselling and guidance
   - Limiting / facilitating factors not directly related to work
     For example:
     - Spouses
     - Care givers
     - Accessibility transport (private or public)

4. Disease/disorder, functions, and structures
   - Tiredness
   - Physical factors limiting and facilitating
     For example:
     - Ability performing movements
   - Cognitive factors limiting and facilitating
     For example:
     - Concentration
     - Remembering
     - Taking decisions

5. Activities
   - Physical activities limiting and facilitating
     For example:
     - Mobility
     - Self-care
Chapter 4

- Grabbing things
- Cognitive activities limiting and facilitating
  - Planning
  - Deciding what should happen
  - Communication

6. Personal factors
- Limiting and facilitating factors
  For example:
  - Education level
  - Age

7. Final question:
- Should anything change about the process of RTW