Transition back to work after mild TBI: a qualitative study

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Abstract

Background: While many persons who sustain a mild traumatic brain injury (MTBI) can resume work shortly after their injury, some experience persisting symptoms leading to longer-term sickness absence. In-depth knowledge about how these persons experience the return to work (RTW) process is needed.

Aims: To explore how persons with MTBI experience the process of return to ordinary competitive work after a prolonged period of sickness absence.

Material and Methods: Semi-structured interviews were conducted with six persons (four women) approximately 12 months after sustaining an MTBI. Data was analysed using a stepwise-deductive inductive method.

Results: When starting work the participants experienced a crisis. They described the importance of making the actual decision to RTW. Being present at the workplace was significant. In the process of increased workload, they expressed having challenges related to time perception and capacity restrictions. The importance of being seen and valued was emphasized. When reintegrated at the workplace revaluing work tasks and priorities shaped the RTW process as well as further professional career.

Conclusions and significance: The process of RTW contained the experience of unpredictability, and incompatibility with own identity and performance. Working had impact on social participation, self-worth, daily structure, as well as reconstructing occupational biography.

Keywords: Biographical disruption, mild traumatic brain injury, return to work, social interaction, work participation.

Introduction

It is estimated that 2.5 million new cases of traumatic brain injury (TBI) occur each year in the European Union (1). Understanding the consequences of TBI for the individual and society is necessary to prevent disability and to develop effective rehabilitation services (2, 3). Since many people who experience TBI are of working age (4), resuming employment is an important objective of rehabilitation (5, 6). Engaging in work can impact upon a person's general sense of competence, accomplishment, and perception of self-worth (7). Being unable to return to work (RTW) has considerable financial and psychosocial consequences for the individual as well as for their family and society (5). Individual factors, work conditions and rehabilitation efforts influence the prospects of stable return to work (RTW) (5, 8-10). Approximately 70 to 90 per cent of all TBIs are classified as mild TBI (MTBI) (1, 11). Reported rates of RTW after MTBI vary according to patient characteristics, occupational characteristics, compensation settings, and MTBI definitions (6). A meta-analysis found pooled RTW proportions (defined as RTW at any capacity) of 56 per cent at 1 month and 88 per cent at 12 months after MTBI (12). Moreover, Silverberg and colleagues reported reduced productivity 8 months after MTBI, despite having successfully returned to work (13). Thus, although many persons are able to resume work shortly after sustaining an MTBI, some persons struggle to RTW and to maintain productivity once work is resumed. In the present study the process of RTW is defined as the transition from a prolonged period of sickness absence to start and gradually return to ordinary competitive work. The study focusses on the experience in the process and does not state the end of the RTW process.

Clinical practice guidelines recommend that people who suffer an MTBI return to ordinary activity as soon as possible after the injury, and a gradual return that is adapted to the person's recovery is recommended (14). Complex interactions occur between premorbid, injury-related, personal and environmental factors that impact the process of transitioning

back to work (5), and vocational rehabilitation should consist of holistic and customised measures that target employees, employers and workplaces (15). Sickness absence after an MTBI may create a sense of guilt, reinforced by the consequences of the injury not necessarily being visible to others (16). Information at an early stage and guidance on the process of RTW can provide the person with security and prevent secondary symptoms such as anxiety (16). Rubenson et al (8) described that RTW was perceived as a long process, while Kristman et al (17) found that some individuals with MTBI had difficulty remaining employed over time. Moreover, Shames et al (5), and Libeson et al (8) reported some returned to changed or adapted work. Vocational support tailored to the person's needs, and cooperation between stakeholders in healthcare, vocational rehabilitation service, employees, and employers is critical to achieve successful RTW (5, 8, 9).

While many persons who sustain an MTBI are able to resume work shortly after their injury, some experience persisting symptoms leading to longer-term sickness absence or a more challenging RTW process. In-depth knowledge about how these persons experience the RTW process is needed (5, 8). To our knowledge, no qualitative studies aimed at exploring the perceived transition back to work after an MTBI have been performed in the Norwegian context, nor have international studies examined the person's experiences of RTW combining transition theory, biographical disruption theory and the occupational science theory including the dimensions of 'doing, being, becoming and belonging'. Thus, the aim of this study was to explore how persons with MTBI experienced the process of returning to ordinary competitive work, after a prolonged period of sickness absence. This knowledge could be of significance for employers and rehabilitation professionals to gain a deeper understanding of how the RTW process is experienced and thereby provide better services

Theoretical framework

Theory of biographical disruption (18) and transition (19) were assessed as relevant in planning of the study. This study apply what Tjora (20) refers to as abduction, in the sense of starting from the empirical data (induction), and include theories and perspectives (deduction) in advance and/or during the research process.

Bury's (18) theory of biographical disruption points to the clear disruption caused by difficulties in returning to work. Biographical disruption is a term that encompass life events, and how an injury may disrupt everyday life and the way it is lived. Thus, there will be a disruption in the experience of coherence and continuity that is usually taken for granted. Bury (18) considers that people think of their lives as a biography, and that a biographical disruption may cause people to tell the continuation of their story in a slightly different way. According to Hammell (7), self-worth is closely related to the stories, the biography that people create about themselves based on past and new experiences.

Schlossberg et al.'s (19) transition theory brings further perspective on the RTW process. Linked to one identifiable event or non-event resulting in change, a transition is considered as a process that extends over time. Transition endorses three phases called 'moving in', 'moving through' and 'moving out'. The first stage to transition can be perceived to be either 'moving in' to a new situation with need to familiarize themselves with the new system, or as 'moving out' of a known situation and may include a grieving process. When people have learned how a new situation works, they go into the 'moving through' stage of transition and try and balance and integrate the implications and demands of the new situation with the rest of their lives.

Materials and methods

A qualitative approach, following the stepwise deductive-inductive method (SDI) (20) was used to study the experiences of persons returning to work after a period of sickness absence

due to persisting symptoms after an MTBI. Individual interviews with six participants were conducted from May to September in 2019.

Context of the study

This study was a freestanding qualitative sub-study of the research project, ‘Combined cognitive and vocational interventions after mild to moderate TBI - a randomized controlled trial’ (21). The trial compared the effectiveness of a combined cognitive and vocational intervention with standard treatment, examining RTW and work stability after mild to moderate TBI. Participants received the intervention during a total of 6 months Participants received the intervention during a total of 6 months. Results from the randomized controlled trial (RCT) have been published previously (22, 23).

Participants in the RCT were recruited from a specialised TBI outpatient clinic at a University Hospital in south-eastern Norway, and consisted of individuals aged 18–60 years with mild to moderate TBI, as assessed by a Glasgow Coma Scale (GCS) score of 10–15, loss of consciousness for <24 h and post-traumatic amnesia for <7 days (14). The participants had been employed in a minimum of a 50 per cent position at the time of injury and had been placed on a 50 per cent or higher rate of sickness absence due to post-concussive symptoms 2–3 months post-injury. Individuals with a history of severe psychiatric or neurological illness, active substance abuse or an inability to speak and read Norwegian language were excluded.

Sample

Participants in this study were identified from the database of the RCT study, using a strategic sampling method (20) and selected based on pre-defined criteria to ensure that they had experience with relevant topics that were to be studied. Inclusion criteria were that the person had returned to work in any capacity for at least one month.

Eligible participants from the intervention group were invited by the first author in collaboration with the second author and the principal investigator of the RCT. A total of six persons received information about the freestanding qualitative sub-study, and all consented to participate. No participants withdrew from the study. The participants were four women and two men aged 29 – 61 years, of which three were in their early thirties. The interviews were conducted on average 12 months after the injury.

All participants had been diagnosed with an MTBI (14). At the time of injury, they were employed in full-time positions and had been working for several years, except one recent employee. The participants were employed in several different sectors: public administration, health care service, office support and catering. Four of the participants were highly educated in higher-skilled jobs, and three were employed in businesses with more than 250 employees. All participants still had some injury-related accommodations at the workplace. At the time of the interviews, four participants had returned to 100 per cent positions and two had achieved 80 – 85 per cent positions. Consistent with work-related outcomes of the RCT study at 12 months (23), which showed high rates of return to competitive employment (90 per cent) and average work percentage (77 per cent).

Study setting

The study was carried out in the south-eastern region of Norway, including residents of Oslo or Akershus county, consisting of approximately 1.3 million inhabitants: one-fourth of the Norwegian population. Norway is a welfare state providing long-term sickness benefits.

Procedure

The participants received a letter inviting them to participate in the study. The letter contained information about the nature and purpose of the study, confidentiality, the right to withdraw, the right to access one's own registered data and included a consent form. If consent forms

were not returned within two weeks, the first author made a follow-up phone call. The interviews (one interview per participant) consisted of open-ended questions and were conducted by the first author, a female occupational therapist with extensive experience in vocational rehabilitation after acquired brain injury. With reference to clinical practice guidelines (14), biographical disruption (18) and transition (19) the interview guide built on knowledge about the process of RTW related to e.g., return to ordinary activity as soon as possible after the injury, a gradual return, resuming employment, disruption and change. Examples of questions were: 'How did you experience starting work again'? 'What did you experience as important for increasing your workload'? and 'Based on new experiences, what thoughts do you have about your future professional career'?

Information about the injury, occupation and position, enterprise size and duration of employment and sickness absence was collected. Interviews took place in a facility chosen by the participants; three interviews were conducted in a public office at the Norwegian Labour and Welfare Administration (NAV), two took place at the participant's workplace and one was performed by phone. The first interview was performed, as a pilot, and transcribed data was evaluated in collaboration with the second and last author. The interview was deemed appropriate with relevant topics in relation to the aim of the study. The interviews lasted for 40 – 50 minutes, except for a 20-minute phone interview and were audio-recorded and transcribed verbatim. The analysed transcripts were returned to the participants for comments and/or corrections. The responses were positive, and no corrections were suggested.

After interview number five and six, the interviewer experienced that the participants did not bring up decisive new information compared to the previous interviews. Applying a consecutive process of transcription of the interviews and a preliminary analysis, it was possible to detect whether new themes were presented by the participants, thus at interview six, it was determined that saturation (20) was reached.

The study was performed in accordance with Guidelines for Research Ethics in the Social Sciences from the National Committee for Research Ethics. Since this freestanding qualitative sub-study was part of a research project already approved by the Regional Committee for Medical and Health Research Ethics South-East Norway (#2016/2038), the Committee approved an amendment for this study.

Data analysis

Tjora (20) represents a stepwise-deductive inductive method (SDI) describing an inductive step-by-step working process with an associated deductive feedback loop to each step to ensure conjunction, from raw data towards concepts. The SDI method is similar to an abductive strategy as theories and perspectives are emphasized interchangeably. This entails emphasis on an inductive approach to promote development of empirical closeness in the findings (codes) and emphasis on the theoretical shaping of the analysis in the last part of the research process. Based on the desire to let the empirical data define the starting point for interesting topics, questions and concepts, SDI was chosen as method.

The first two steps of the SDI method (20), are the generation of empirical data and processing of the raw data as described in previous section. With all interviews conducted, the data generated were processed, followed by a deductive feedback loop to assess whether the participants were representative to ensure having experience with relevant topics. The SDI method includes steps for coding, the grouping of codes, and concept development (20). In the initial analysis, the first author performed a detailed inductive coding; read the text thoroughly and created codes e.g., parts of a sentence, a statement that carried meaning. Coding resulted in 382 empirical-adjacent codes to protect the uniqueness of the material (examples table 1). All interview transcripts were imported as documents in NVivo 12 before quotes were coded. Code lists could be viewed individually or collectively from all documents. The program made it possible to follow the code back to its original document to

view the context, thus easing the analysis process. In the next step, the first author grouped codes that seemed relevant to the research question and exhibited common thematic code groups (examples table 1). The codes that were irrelevant to the research question were split off into a miscellaneous group and not included further in the analysis.

To validate coding and code grouping, as well as to evaluate the possibility of data saturation, the analyses were performed by the first author in close collaboration with two co-authors: a professor in occupational therapy (U.S), and a clinical psychologist with a PhD (E.I.H.). In this process, the co-authors read through excerpts of transcribed interviews, codes and code groups to ensure quality through joint discussion and reflection on the first author's choices at each step of the SDI method.

The theories were applied during the final stages of analyses, after inductive processing of raw data and empirical coding, as a means of interpreting the participant's experiences. An abductive approach contributes to developing concepts with relevance beyond the studied samples. With an emphasis on reflexive aspects and the relevance of abduction, Tjora (20) underlines the importance of having an awareness of preconceptions that researchers always possess. Transparency around these preconceptions is important. Thus, engagement in meaningful activities in daily life, such as work, is an occupational science perspective contributing to this study. When finalizing the stages of analyses, the concept of 'doing, being, and becoming' (24), appeared to be useful to interpret the participants' stories of the meaning of work. Theoretical concepts related to biographical disruption (18), transition (19), and 'doing, being, becoming, and belonging' (7, 24) were chosen to provide a framework for understanding the participants' experiences about the RTW process. This led to the thematic presentation of results as topics, described as a non-linear process, although the process did have a forward momentum; starting work, increase workload and reintegrated into work (figure 1). In the following section the results reveal how

persons with MTBI experienced the process of returning to ordinary competitive work, after a prolonged period of sickness absence. Later, in the discussion section, theoretical concepts are used to support the findings and help understand what the findings imply.

Table 1. Examples from the steps of the analysis process; empirical statements related to codes and code groups.

[Table 1. near here]

Results

The analyses resulted in eight code groups, analyzed on the basis of empirical data which are presented in three theme phases in a process model (figure 1). The results describe how the participants retrospectively experienced the process of returning to work. When starting work the participants experienced a crisis. They described the importance of making the actual decision to RTW. Being present at the workplace was significant. In the process of increased workload, they expressed having challenges related to time perception and capacity restrictions. The importance of being seen was emphasized. When reintegrated at the workplace, determining priorities, revaluing work tasks and priorities shaped the RTW process and further professional career.

[Figure 1. near here]

Figure 1. Eight code groups, analyzes on the basis of empirical data, presented in three theme phases.

Starting work

This phase describes the most prominent experiences in the initial phase of RTW after a period of absence. Attendance can include a few hours a couple of days a week, with large individual differences related to attendance and the time aspect ranging from weeks to months. The following quotation was selected as an overall description of how the phase of was experienced:

> *You actually have to be strong enough to be sick, you have to be able to put up with it, you have to tolerate your life not being very good right now.*

The crisis

The crisis dealt with challenging feelings, which were linked to experiencing that working life, as an important arena, was not mastered as before. One person reported that the inability to handle work the same way as before was *'the hardest thing I have experienced in my whole life'*. Some participants thought starting work again was extremely difficult, challenging and occasionally all-consuming in their everyday lives. One person stated that: *'I don't think that many people would be willing to sacrifice as much as I have sacrificed in order to return to work'*. Strong emotions were expressed, such as a fear of being irritable and experiencing depression, as well as a feeling of crisis related to being unable to handle the work. As one of them expressed: *'Work ... maybe at this particular period of my life ... is 90 per cent of my identity'*. Although experiencing a crisis, work participation helped them to get out, meet people, and feel a sense of participation in society and satisfaction in their everyday lives.

The decision to RTW

Some participants felt that their general practitioner (GP), co-workers and next-of-kin influenced their decision to RTW, despite their own misgivings. One of them said: *'I'd say that my doctor pressured me. ... I feel that he didn't really understand what I was going*

through.' Another stated that they made the decision themselves, even though persons around them had doubts: *'I felt restless, so I told my doctor that I don't want to stay at home ... He didn't recommend it but said that I could try to resume work gently.'* Several participants were uncertain whether there was any 'right time' to return to work. One person expressed: *'My GP could have waited a bit. On the other hand, I'm not sure there was a time that would have been perfect for starting anyway.'* Advice and support from next-of-kin and healthcare professionals were reported to be important: *'And I think that some professionals just need to say that returning is really awful ... but it gets better.'* Participants found it helpful to participate in a cognitive intervention group, part of the RCT intervention, with persons in a similar situation as themselves. Through dialog with peers, some found it inspiring aiming to get as far as others, while other participants experienced it as a self-imposed pressure by comparing themselves with others.

Being physically present at the workplace

Going to work again, was stated by the participants as helpful in getting out of the house and to feel useful. One person described the importance of going to work and just being present there, almost pretending to work, and coming and going when it suited them: *'I wasn't there for many hours ... mostly to stop by, say hi, and have a cup of coffee. To feel useful and not get stuck in a rut at home.'* Even though it was difficult to resume work, presence at the workplace felt critical. One person described the attendance at the beginning of the RTW process as nice and quiet. They could be 'on the outside' without being pressured to be productive, yet their tasks and responsibilities could be increased when they were ready. Another person was afraid to make mistakes in her work, but it was still important to be physically present at the workplace. Most participants reported that they were free to decide their degree of presence; much of it was about testing the waters: *'... feeling that my employer understood my situation and that I received the understanding and the time I needed'.* Others

appeared to have encountered less understanding in the workplace. One person said that: *'my employer should have realised how serious things were sooner'.*

Increased workload

This phase describes the most prominent experiences when the workload is expected to increase, as mastery is achieved, and the experience of setbacks could occur. Attendance may involve reduced working hours each day, or entire working days alternated with rest days in between. The following quote was selected as an overall description of how the phase of was experienced:

> *It was (...) a bit up and down ... I eventually realised that it is better to stay one week longer in a lower percentage of a full-time position than to repeatedly have setbacks.*

Time perception

Their expectations and plans regarding the time they spent on tasks were no longer realistic, and their patience diminished e.g., planning, and performing tasks took longer, and the process of mastering tasks again took much longer than expected. *One person expressed: 'I'm not going to recover sooner if I push myself ... just take things as they come, just take the time necessary.'* Time was a topic in their conversations with their doctors, employers, and healthcare professionals in terms of assessing the right time to increase their workload and the projected time it would take to return to pre-injury levels of functioning. For some, there was a gap between one's own expectations about time and other people's expectations about time. Some people wanted to spend more time recovering than those around them expected, and others wanted to spend less time. There was no recipe for the rate of progress with the return to work. It was necessary to use a trial-and-error approach and see how much time they needed to accomplish a task, and when time was ready to increase their workload.

Being seen, valued, and included

Being seen, valued and included by one's superiors and co-workers were reported to be important. Superiors were described as being present and helpful, such as by greeting the participants, having regular conversations and regular check-ins with them or by asking how they felt. One person was told: *'This is something that we as a workplace will help you through. You shouldn't handle this on your own.'* Co-workers were also described as being helpful and supportive. Another said that contact with the workplace and receiving input during the period when they worked from their home office was particularly important. One person who usually worked in an open-plan office was assigned a separate office as part of the adjustment. Having a separate office led to an absence of the spontaneous dialogue, contact and collaboration with co-workers that is natural in an open-plan office. Another person stated that their co-workers provided positive feedback on the tasks that had been done on the day the person had been at work. It was particularly important that the participant's specific work was valued, without being compared to their past performance. Being seen, valued and included helped the participants feel welcome and was important for their motivation and willingness to increase their workload. However, the participants reported that reduced working hours as part of a gradual returning process also limited their professional and social interactions. One of them stated: *'I went from being someone who heard things first in the corridors to being someone who heard things last.'*

Capacity

Most of the participants said they had higher expectations of increasing their workloads than others had for them. During conversations with their GPs, employers, and healthcare professionals, they were asked to assess their own health and whether they felt ready to work more. Some participants believed that their own inner drive was the most important motivating factor in increasing their workload, while others said that external forces were

most important. Learning through experience was important in the escalation phase of workload, both for the individual and for those giving advice. One person expressed that it took quite a long time to recognise that: *'I won't get better faster by pushing and pressuring myself to be at work, because I notice that I get very, very tired from it'*. Some participants reported that each escalation period required all their daily capacity of activity. They used the time after work to sleep, and some had next-of-kin who helped them at home. One of them stated:

> *I started working in a 20-per cent position, and I spent the rest of the time in bed. I didn't have a life. (...) Then I gradually managed to do a little more. When I reached 30 per cent, I was back in the same situation where the only thing I did was work in my 30-per cent position or lay at home and sleep.*

Reintegrated into work

In this phase, work percentage may have got close to, or possibly reached 100 per cent, and might still consist of some injury-related accommodations at the workplace. The following quote was selected as an overall description of how the phase was experienced:

> *It's possible that I can't work as much as I did before. Or at least I need to be very aware that if I work too much, it will come at the expense of something else much more than before.*

Setting priorities

New perceptions and experiences gained through the hard work of returning to the workplace caused some participants to change their short- and long-term priorities. As one person described this: '*I'm not able to do as much as I used to, and this is probably also combined with the fact that I have slightly different priorities in my life now.'* Some participants said they would no longer allow their job to take so much of their time, energy, and capacity for

activity performance. New boundaries between work and leisure meant that they would now do their work during work hours and limit the amount of work-related phone calls, text messages and emails they dealt with after work. Some reported that they gradually worked more as they regained their health and that as their old habits returned, they forgot good advice about adaptation, such as taking breaks. One person explained that: *'you kind of forget it yourself too, because you really just want to be healthy, to be the person you used to be'*. Another person found that she thought a little differently about her job, keeping some of the work adaptation and incorporating new habits:

> *We've been continually reminded about taking breaks. It's not necessarily because I feel the need for it because of my head injury, but in a way it's more like, maybe like things are more settled in the workplace.*

Revalue work and priorities

Some participants reported that new perceptions caused them to change some of their attitudes about their workplace and their future goals for working life. One person who had been looking for another job before the injury said that having the employer's support during a difficult time made her feel proud and she wanted to continue working there: *'The way my employer responded to my lengthy sickness absence got me thinking that this is not a place to quit just for the sake of quitting (...) my job has some qualities that came to light in this process (...) and I've become more satisfied with where I am.'* Another expressed she was the kind of person who had changed jobs frequently to develop her career. As a result of new experiences, the person now prioritised satisfaction in her current position. One person stated that his situation had caused some plans and opportunities in the company to be set aside. In addition, other plans were reassessed and changed so that reaching the goal would now take longer, or the scope and prestige of the goal had been scaled back. One of them described herself as not career-motivated but had always thought that good health and enjoyment in

working life and life in general were most important – and that this had become even more important now. Another person continued to have challenges performing on the job, which led to the desire to switch occupations. However, changing job the person had done for a long time was reported as being difficult: *'I've been doing this for ten years, so it's not so easy to just change jobs.'*

Discussion

The purpose of this study was to investigate how persons who had suffered an MTBI experienced and perceived the process of returning to work after a prolonged period of sickness absence. Three phases in the return to work process were found: 'Starting work', 'Increased workload', and 'Reintegrated into work'. The discussion of the results is based on how the empirical findings relate to theoretical concepts such as: biographical disruption (18), transition (19), and 'doing, being, becoming and belonging '(7, 24).

Disruption and reconstruction of working life, as life events

The participants described the inability to handle work the same way as before when returning to work after sustaining an MTBI. According to Bury (18), experiencing an MTBI can be conceptualized as a 'critical event' disrupting working life and its normal and predictable structure. For some participants the challenges, corresponding to the disruption, were not fully apparent until they returned to work. This aligns with Raskin and Mateer (25) showing that difficulties after an MTBI often do not arise until previous activities are resumed. Some participants reported that particularly in the beginning, work took all their energy, which limited or prevented them from participating in other life areas. Similarly, Sveen et al (16) found that people with MTBI who returned to work often did so at the expense of other life areas, thus, limitations in work participation and social life may lead to a re-assessment of values in occupation and life in general. The participants described the situation as unfamiliar

and not recognizing themselves. According to Johansson and Tham (26), work participation provides a great deal of structure to everyday life, beyond the workday itself. Experience of disruption and discontinuity creates a lack of both predictability and manageability and the person enters a relentless effort to create and recreate continuity (18).

When reintegrated into work, the participants described that the process had led to a need for revaluing work and priorities. According to Bury (18), a disruptive event may require a reassessment of expectations and plans, mobilising resources and rethinking one's biography. Some participants discussed a change in short- and long-term priorities, e.g., changed goals or changes in the path to the goal. Some described increased satisfaction in their current position due to perceived support from colleagues, new boundaries between work and leisure and good health and enjoyment as even more important. In line with this, Bonneterre et al (9) reported a change in career aspirations after a TBI. Furthermore, Johansson and Tham's (26) study on the significance of work after an acquired brain injury, found that the experience of an injury led to reflections on a more existential level and, like our participants, emphasized valuing aspects beside work that were important to enjoy life. How persons create continuity after the experience of a disruption, e.g., new perceptions caused some to change future goals for working life, is described by Hammell (7) as a complex process in an interaction with the surroundings, and involves striving for predictability and order as well as stability and normality.

The concept of biographical disruption (18) emphasises work participation as important in order to reconstruct and enable continuity in one's life following a biographical disruption. This corresponds to when an MTBI had taken place and a reconstruction including work had started for the participants in the present study. Likewise, Sveen et al (16) explored MTBI as a biographical disruption, followed by a reconstruction, where individuals described

a positive RTW process attempting to restore their pre-injury selves and a feeling of self-worth, while building a new identity.

Minor injury as a major transition, a process in development

The change from no longer mastering work as before, 'moving out', to starting work again with uncertainty about their mastery, the 'moving in', was described by the participants as a difficult period of strong emotions and the experience of crisis. Schlossberg et al.'s (19) describe the 'moving out' phase as handling the loss of former roles and may include a grieving process, navigating in to the phase of 'moving in' consisting of a new situation and a 'hang-over' identity. In line with this, Sveen et al (16) describes uncertainty and feeling of despair caused by uncertainty about what to expect when returning to work. These experiences can be understood through the features of unexpected transitions: persons do not choose the transition themselves; they are not prepared and have no fixed plan and assistance in the process that can be beneficial. An unexpected transition is more likely to lead to a crisis than a planned transition (19).

Uncertainty about whether there was a right time to start work, and a right time to increase workload, was described as a major challenge. Assessment of time to start work was by some described as their own decision, while others did so from the encouragement or even pressure from others. The time it took to start work after an MTBI is similarly discussed in a systematic review by Boussard et al (3) recommending that persons with MTBI should be encouraged to become active as soon as possible after the injury. Furthermore, Libeson et al (8) identified timing of RTW after TBI as an important factor. They further state that to avoid negative consequences of returning to work too soon after injury, significant focus should be given on cognitive support and preparation, e.g., awareness of difficulties, prior to returning to work. The participants described this period as unpredictable, with its 'ups and downs'. Without a formula or template for what they should do, the participants had to adopt a trial-

and-error approach which required new adaptations along the way. Preparation and continuity between work and previous experiences before, during and after the transition is considered important for a good transition (27). Applying transition theory, reintegration to work after an MTBI may be experienced as a continuous 'moving through' when they in a new situation learn to balance their activities, back to 'moving in' to a new situation when they increase workload and again must strive to balance their activities.

The RTW process after an MTBI consists of different stages at different times, with a content of unpredictability, inconsistent with own identity and performance, and a challenging aspect of time. In the current study, Schlossberg et al.'s (19) transition process was selected to capture the participants' RTW process and shed light on the stages between Burys (18) biographical disruption and achievement of reconstruction. Reconstruction takes place in three phases: 'starting work, increased workload and reintegration into work' (figure 1) which are the empirical names of the processes of transition moving; 'in, through and out'. Schlossberg's transition process (19) contribute to the analysis by emphasising support and preparation of a cautious re-entry, tailored to the person's needs and to shape the participants' RTW process and reconstruction of a professional career.

Meaning of 'doing, being, becoming' and 'belonging'

During the final stages of the analyses we found Hammell's (7) and Wilcock's (24) concepts of 'doing, being and becoming' useful to interpret the participants' stories of meaning of work in the process. Indeed, Wilcock (24) claimed that the word 'doing' is synonymous with occupation. The participants talked much about 'doing', the active and observable dimension, e.g., going to work and being present, and how the ability of 'doing' provided important structure, affirmation of competence and enhanced feeling of self-worth.

The 'being' dimension is the subjective sense of self-confidence, and enjoyment of being with special people, was present in the participants' stories in terms of reflecting, revaluing,

enjoyment and appreciation, social participation etc. The final dimension ‘becoming’, which focuses on the future, expressed as developing, changing, and improving, occurred in the participants´ narratives when thinking and striving for further development. Hammel (7) has added a fourth dimension named ‘belonging’ in occupational performance and life satisfaction, describing the necessary contribution of social interaction, mutual support and the sense of being included. This dimension appears in the participants’ stories about social participation and being part of the working environment.

Wilcock (24) highlights that what defines occupation is beyond the’ doing’ and the aspect of self is an essential part and brings up to the notion of ‘being’. The participants reported that social participation, such as being included in formal and informal conversations about tasks and events, was crucial and important for their well-being. This was confirmed by Ruffolo et al (28) showing that social interaction was important in the process of returning to work after an MTBI. Johansson and Tham (26) emphasise that the social significance of work after an acquired brain injury had become clearer and that work also had a positive impact on a person’s social life in general. The relationship between work and health involves the individual’s experiences of their social work environment (24).

Several participants felt that accommodations such as having a separate office, home office and reduced work hours led to limited professional and social interaction. This led to a feeling of losing contact with colleagues and promoted a sense of loneliness and dissatisfaction. Presence and participation are described also in another study that explained workload below 50 per cent was limiting social contact and participation in the workplace (10). Kielhofner (29) described three domains of skills necessary for participation in activities: motor, process and communication skills. As the above examples illustrate, accommodations related to one skill domain may be limiting to another domain. Hammell (7)

showed that belonging to a socially supportive network can contribute to enjoyment and a sense of meaning in occupations, thus having an impact on perception of self-worth.

Work performance has been described by Wilcock (24) as more than the observable act of work; rather, it may be perceived as an interaction among the three dimensions of ‘doing’, ‘being’ and ‘becoming’. Thus, an interaction among the three dimensions was present in the participants’ stories about being physically present at the workplace, and had a mutual impact on e.g., structure of everyday life, well-being and striving forward, with the result of a desire to continue and manage the process of RTW.

How a person creates meaning through what is done will have an impact on how the person experiences coping and dealing with the transition. In the participants’ stories ‘doing’ was an important concept in all three phases, the ‘being’ was prominent in the increasing phase, and the experience of both ‘doing and being’ have impact on the latter phase ‘becoming’ and being integrated into work. The concepts of ‘doing, being and becoming’ may contribute to vocational support, how we may best utilize these in self growth, to capture all the aspects of what is done, the meaning of the performance and its importance for further development in the process of return to work after an MTBI.

Strengths and limitations

Tjora (20) states that the SDI method supports reliability by establishing clear requirements for data generation, empirical analysis and theories that are made relevant in the final phase. The strategic sample of six participants in this study is somewhat small; however, the participants were selected based on their relevant experiences and contributed rich data on relevant topics. Interview length was planned with limited duration to avoid exhaustion. To confirm the categories and empirical closeness, the analyses were performed by the first author in close collaboration with two co-authors. Furthermore, analysed transcripts were returned to the participants for comments and/or corrections; the responses received were

positive, and no corrections were suggested. All the persons who were invited to participate accepted, and none withdrew from the study. However, a limitation is that the results reflect the experiences of a group of highly educated and young people. Furthermore, the study covered the first year following the injury and therefore does not contribute to knowledge about the long-term process and long-term changes that people undergo after an MTBI. The study was performed in Norway, a public welfare state with long-term sickness benefits. This may influence the RTW experience, since resuming work could be less influenced by financial motivation. Even if generalization is not the aim of qualitative research, it is reasonable to assume that the results presented in the process model (figure1), and highlights described in the conclusion could be valid for other persons with an MTBI in the process of RTW. Further studies should include knowledge about the long-term RTW process the people undergo, and the views and experiences of employers on the RTW process.

Conclusion

In summary, returning to work after a biographical disruption such as when an MTBI occurs appears to be a complex and emotionally challenging process. Life involves struggles for the familiar, the predictable and a need to resume work – the doing aspect. The reconstruction of work after an MTBI, has impact on social participation, self-worth, and structure in everyday life in general – the being aspect. The RTW process involved striving for further development and revaluing one's priorities in life shaping one's own further professional career – as in becoming. Finally, the importance of being part of the working environment – as in belonging. The RTW process consists of several stages of reconstruction (moving in, through and out) with unpredictability, inconsistent with own identity and performance, and a challenging aspect of time.

Engagement in meaningful activities in daily life, such as work, is an occupational science perspective contributing to this study. Occupational therapy practice promotes a

unique understanding of occupation, including all things that people do, the relationship between what they do and whom they are, and how occupation may lead to personal growth and change. This understanding has implications on occupational therapy expertise, capturing the complex interaction in the process of return to work after a biographical disruption, which in this study was encountered after a mild traumatic brain injury.

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References

1. Maas AIR, Menon DK, Adelson PD, Andelic N, Bell MJ, Belli A, et al. Traumatic brain injury: integrated approaches to improve prevention, clinical care, and research. Lancet neurology. 2017;16(12):987-1048.
2. Ponsford JL, Downing MG, Olver J, Ponsford M, Acher R, Carty M, et al. Longitudinal Follow-Up of Patients with Traumatic Brain Injury: Outcome at Two, Five, and Ten Years Post-Injury. Journal of Neurotrauma. 2014;31(1):64-77.
3. Boussard CN-d, Holm LW, Cancelliere C, Godbolt AK, Boyle E, Stålnacke B-M, et al. Nonsurgical Interventions After Mild Traumatic Brain Injury: A Systematic Review. Results of the International Collaboration on Mild Traumatic Brain Injury Prognosis. Archives of Physical Medicine and Rehabilitation. 2014;95(3):257-264.
4. Gilworth G, Eyres S, Carey A, Bhakta BB, Tennant A. Working with a brain injury: Personal experiences of returning to work following a mild or moderate brain injury. Journal of rehabilitation medicine. 2008;.40 (5):334-339.
5. Shames J, Treger I, Ring H, Giaquinto S. Return to work following traumatic brain injury: Trends and challenges. Disability & Rehabilitation. 2007:29(17):1387-1395.
6. Cancelliere C, Kristman VL, Cassidy JD, Hincapié CA, Côté P, Boyle E, et al. Systematic Review of Return to Work After Mild Traumatic Brain Injury: Results of the International Collaboration on Mild Traumatic Brain Injury Prognosis. Arch Phys Med Rehabil. 2014;95(3):201-209.
7. Hammell KW. Dimensions of Meaning in the Occupations of Daily Life. Canadian Journal of Occupational Therapy. 2004;71(5):296-305.
8. Libeson L, Downing M, Ross P, Ponsford J. The experience of return to work in individuals with traumatic brain injury (TBI): A qualitative study. Neuropsychological rehabilitation, 2020;30 (3):412-429.
9. Bonneterre V, Pérennou D, Trovatello V, Mignot N, Segal P, Balducci F, et al. Interest of workplace support for returning to work after a traumatic brain injury: A retrospective study. Annals of Physical and Rehabilitation Medicine. 2013;56(9-10):652-662.
10. Rubenson C, Svensson E, Linddahl I, Björklund A. Experiences of returning to work after acquired brain injury. Scand J Occup Ther. 2007;14(4):205-214.
11. Andelic N, Sigurdardottir S, Brunborg C, Roe C. Incidence of Hospital-Treated Traumatic Brain Injury in the Oslo Population. Neuroepidemiology. 2008;30(2):120-128.
12. Bloom B, Thomas S, Ahrensberg JM, Weaver R, Fowler A, Bestwick J, et al. A systematic review and meta-analysis of return to work after mild Traumatic brain injury. Brain Inj. 2018;32(13-14):1623-36.
13. Silverberg ND, Panenka WJ, Iverson GL. Work Productivity Loss After Mild Traumatic Brain Injury. Arch Phys Med Rehabil. 2018;99(2):250-256.
14. VA/DoD Clinical Practice Guideline for Management of Concussion/Mild Traumatic Brain Injury. Journal of rehabilitation research and development. 2009;46(6):CP1.
15. Scaratti C, Leonardi M, Sattin D, Schiavolin S, Willems M, Raggi A. Work-related difficulties in patients with traumatic brain injury: a systematic review on predictors and associated factors. Disabil Rehabil. 2017;39(9):847-855.
16. Sveen U, Søberg HL, Østensjø S. Biographical disruption, adjustment and reconstruction of everyday occupations and work participation after mild traumatic brain injury. A focus group study. Disability and Rehabilitation. 2016;38(23):2296-2304.
17. Kristman VL, Cote P, Hogg-Johnson S, Cassidy JD, Eerd DV, Vidmar M, et al. The Burden of Work Disability Associated with Mild Traumatic Brain Injury in Ontario Compensated Workers: A Prospective Cohort Study. The Open Occupational Health & Safety Journal. 2010;2(1):1-8.

18. Bury M. Chronic illness as biographical disruption. Sociology of Health & Illness. 1982;4(2):167-182.
19. Anderson ML, Goodman JM, Schlossberg NKM. Counseling adults in transition linking Schlossberg's theory with practice in a diverse world, fourth edition. 4th ed ed. S.l.]: S.l. : Springer Publishing Company; 2012.
20. Tjora AH. Qualitative research as stepwise-deductive induction. Abingdon, Oxon: Routledge; 2019.
21. Howe EI, Langlo K-PS, Terjesen HCA, Røe C, Schanke A-K, Søberg HL, et al. Combined cognitive and vocational interventions after mild to moderate traumatic brain injury: study protocol for a randomized controlled trial.Trials, 2017;18(1):483-483.
22. Howe E, Fure SCR, Løvstad M, Enehaug H, Sagstad K, Hellstrøm T, et al. Effectiveness of Combining Compensatory Cognitive Training and Vocational Intervention vs. Treatment as Usual on Return to Work Following Mild-to-Moderate Traumatic Brain Injury: Interim Analysis at 3 and 6 Month Follow-Up. Frontiers in neurology, 2020;(11):561400-561400.
23. Fure SCR, Howe EI, Andelic N, Brunborg C, Sveen U, Røe C, et al. Cognitive and vocational rehabilitation after mild-to-moderate traumatic brain injury: A randomised controlled trial. Ann Phys Rehabil Med. 2021;64(5):101538-101538.
24. Wilcock AA. Reflections on doing, being and becoming. Australian occupational therapy journal. 1999;46(1):1-11.
25. Raskin SA, Mateer CA. Neuropsychological management of mild traumatic brain injury. New York: Oxford University Press; 2000.
26. Johansson U, Tham K. The meaning of work after acquired brain injury. The American journal of occupational therapy. 2006;60 (1):60-69.
27. Crider C, Calder CR, Bunting KL, Forwell S. An Integrative Review of Occupational Science and Theoretical Literature Exploring Transition. Journal of Occupational Science. 2014;22(3):1-16.
28. Ruffolo CF, Friedland JF, Dawson DR, Colantonio A, Lindsay PH. Mild traumatic brain injury from motor vehicle accidents: Factors associated with return to work. Arch Phys Med Rehabil. 1999;80(4):392-398.
29. Kielhofner G. Habituation: Patterns of Daily Occupations. Model of human occupation. 5th ed. ed. Philadelphia: Wolters Kluwer Health; 2008:51-67.