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Enhancing functional improvement in reablement – a qualitative study

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ABSTRACT

Background and purpose: Reablement is aimed to enable people to remain independent in their lives and is based on users' own goals. Interventions are described to involve both physical exercises and guidance in everyday activities. However, descriptions of the content of reablement practices are sparse. This study aims to investigate and discuss how physiotherapists (PTs) on reablement teams plan and adapt training interventions to enhance users' functional abilities.

Methods: We conducted fieldwork with seven Norwegian reablement teams, including video observations of interventions and interviews with PTs and home trainers. The results were analysed through thematic content analyses in which we used motor learning theory to interpret the results.

Results: The analyses revealed that reablement practices typically involved either (i) exercise-based training, (ii) activity-based training, or (iii) a combination of both exercise- and activity-based training. **Discussion:** Reablement interventions are described as individually tailored and goal oriented. However, in practice, it is challenging to implement training that emphasises both physical function- and goal-oriented activities. Motor learning and relearning depend on several principles and require both exercise-based and activity-based training. Standardised approaches emphasising physical exercises may neglect a particular activity that is important to the user. On the other hand, exclusively activity-based approaches may omit individual, specific aspects of bodily movement and physical constraints. The use of only one aspect of training may limit the potential for functional improvement, while a combination of the two is more likely to meet the principles of motor learning theories.

Introduction

Reablement is a new and innovative intervention targeting older adults who experience functional decline or have a need for recovery after hospitalisation and illness or injuries, such as stroke, heart disease and fractures [1]. The intervention takes place in the user's home environment, aiming to enable the user to remain independent or regain functional abilities, and physiotherapists (PTs) contribute as part of a multidisciplinary team [2–5]. Although the body of evidence for reablement is growing, studies that describe the content of interventions and clinical practice are sparse, which indicates a need for qualitative studies. In the present study, we investigate how PTs plan and adapt reablement to enhance users' functional abilities.

The definition of reablement lacks consistency and has indistinct boundaries to distinguish it from other health and social care interventions, such as intermediate care and domiciliary services [4]. However, the optimisation of functioning and the performance of the activities of daily living (ADL) is central and is achieved through individual adaptations, person-centeredness and goal setting [1,3]. The question 'what are important activities for you?' is a typical starting point for the multidisciplinary teams consisting of PTs, occupational therapists (OTs), nurses and home trainers (HTs) (assistant personnel). This correspond with theories emphasising shared decision making in rehabilitation settings [6]. PTs' main responsibility is to plan physical training and to supervise HTs who conduct day-to-day training with the patient [7,8]. Previous studies indicate that exercise-based training that targets muscle strength and balance [9,10] and ADL training [10,11] are common; such training is focussed on personal care, functional mobility, and community management [1]. However, to develop a knowledge base for reablement services, there is a need for thicker descriptions and discussions of the clinical practices and strategies used in the interventions.

Physiotherapy as an intervention requires an evidencebased practice (EBP) attitude, [12], although there are no established guidelines regarding the implementation of physiotherapy in a reablement setting. Physiotherapy associations [13,14] and scholars [15,16] suggest the use of principles of contemporary motor learning and motor control theory. The user's health can be assessed based on the International Classification of Functioning, Disability and

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KEYWORDS

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Health (ICF) model [17], which comprises the components of *body functions and structures* (e.g. muscle strength and balance), *activities* (e.g. gait and eating) and *participation* (e.g. visiting family and shopping). In addition to providing a classification of health conditions, the ICF model also serves as a tool for rehabilitation interventions [18,19]. The components of the model correspond to central elements of motor learning, and the model is therefore appropriate in the discussion of reablement services initiatives.

The prevailing theories of motor learning are based on modern neuroscience research and indicate that motor (re)learning depends on several prerequisites [20] in which *specificity, intensity, meaningfulness* and *transferability* are particularly relevant to adapt interventions to the patient's needs. To provide a theoretical framework for physiotherapy practice in reablement settings, it is useful to include analyses of how practices correspond with these theories. PTs are described as having a consultant role in reablement services; they assess users' function and goals, develop reablement plans, and supervise HTs who conduct training [10,21]. It is reasonable to question how PTs plan and adapt initiatives in this new service setting of reablement when they have to manage the supervision of HTs as intermediary actors.

Based on these considerations and the theoretical framework, the aim of our study is to investigate and discuss how PTs on reablement teams plan and adapt training interventions to enhance users' functional abilities.

Methods

This qualitative study was conducted within an interpretative research paradigm [22]. The study involved fieldwork with seven reablement teams, including videotaped observations of user encounters and in-depth interviews with PTs and HTs. The prevailing theories of motor learning and the ICF model guided the analysis through an iterative process, moving back and forth between theory and the data.

Context and participants

One PT, one HT, and one reablement user from seven different reablement teams in Norwegian municipalities were recruited (N = 21). The inclusion criterion for the PTs and HTs was having at least 6 months of experience with reablement. In addition, all participants had to be able to consent to participate, and users with cognitive impairment were excluded. We contacted general managers of reablement teams and distributed information about the study to PTs and HTs, who were included in the study. The PTs recruited users who were about to receive reablement. Table 1 provides more information about the participants.

Data collection

The first author (ME, a researcher and PT) conducted video observations [cf. 23] of two user encounters for each of the seven reablement teams with an interval of 2 weeks (14

observations). Key points in the observation guide were (1) the treatment setting, (2) the content of assessment or training actions, (3) instructions to users, (4) communication, and (5) changes in the user's function or movement. The encounter observations were followed by semistructured interviews with the PTs and the HTs. The participants were encouraged to talk freely about the observed intervention and reablement interventions in general. An interview guide guided the conversation to include clinical reasoning, user assessment and interventions. The combination of video observations and interviews provided rich and nuanced data on the reablement interventions.

Analysis

We performed a thematic content analysis of the data in line with [24] description of systematic text condensation of qualitative data. Initially, we analysed the results inductively, searching for patterns in the empirical data, followed by an abductive process [22,25–27] that allowed for a theoretical interpretation based on motor learning theory.

The first author (ME) transcribed the interviews verbatim. Transcription of the video observations, included verbal talking and bodily interactions, inspired by [28]. In this process, we transformed all data into text material, which enabled the common processing of all data in the consecutive analyses, in which we produced inductive codes that were relevant for the research question. In the next step, we categorised all codes in common code groups, which were further merged into the three themes (representing the results of this study). Triangulation of multiple data sources (observations and interviews) was achieved by linking the data through common code groups. Congruent data from all three methods supported and validated each other, while discrepancies were further analysed to achieve an understanding of the inconsistency. We carried out continuous discussions of the data, emphasising common perceptions, which enhanced the validity of the study [22].

QSR NVivo 11 [29], a qualitative data analysis software, was used during the coding and categorisation of the data.

Results

The analyses revealed that interventions across different Norwegian reablement teams varied. We identified three main categories of interventions: (i) exercise-based training, (ii) activity-based training, or (iii) a combination of both exercise- and activity-based training.

Exercise-based training

Some of the PTs argued that physical abilities, such as strength and balance, are the core of physical function and based their initiatives mainly on physical exercises, usually targeting leg strength and balance. Reflecting about a user whose goal was to be able to cook a meal independently, one PT said: We rarely train on such activities. She has been cooking her entire life, and she knows how to do it. She just needs... everything evolves around physical abilities. Balance and strength; that is the core of everything (PT).

The PTs argued that exercised-based training is preferable when focussing on physical abilities. Basic exercise programmes require little equipment and allow easy supervision of HTs and users. For example a PT prescribed some exercises, targeting leg strength and balance¹ for an elderly lady whose goal was to be able to walk independently outside her home. When we visited the same user 2 weeks later, she expressed concerns about her own progression:

It's so hard to lift the left leg. I can't seem to find the balance, and I just can't get it higher. I have felt some pain after I started doing these exercises (User).

The HT glanced towards her, mumbling '*mhm*' before she carried on counting repetitions. The training content was limited to the specified numbers of repetitions of the prescribed exercises, and little adjustments and tailoring were performed.

Another woman who we visited had the same rehabilitation goal, i.e. to walk independently outside, but perceived that the training did not correspond with her stated goal.

The HT instructed the user to walk sideways while supporting her hands on the kitchen counter. The user asked why she had to do it, to which the HT answered, 'Because you are supposed to work on your walking'. User: 'But I walk so much otherwise'. HT: 'Soon, we will walk outside, so you will need some strength in your legs, right?' The user asked when they would be going outside. HT: 'One day'. User: 'One day, yes... What day?' HT: 'We'll think about that'. Then, the HT shifted the conversation.

The examples above are excerpts of what we have called 'exercised-based training'. In our results, three of the seven visited reablement teams, mainly applied such an approach. Table 1 shows the distribution of the different approaches.

Activity-based training

On some of the reablement teams, interventions were mainly based on activities that were closely linked to the user's goals. One PT said,

Table 1. Participators.

We try to focus on activities, for example, to travel by bus, go to the grocery, training on getting in and out of the car, to drive a car or take a cab. The imagination is our only limitation. If going to the café is what is important for you, that is what you should be training on. We have bus tickets so that they can train on taking the bus. We try to do these untraditional activities, and of course, help them to attend group activities that they might have stopped going to (PT).

We have called this approach 'activity-based training', which two of the seven included reablement teams applied (Table 1). This approach was conducted by carrying out activities without any specific focus on technique or effect-iveness regarding the accuracy of movement. In some cases, the user was not able to perform some of the activities, and they would have to interrupt the training, usually due to pain or fatigue. One PT said,

They do not always succeed. Occasionally, we have to give up. It is often due to pain or low physical capacity (PT).

The activity-based approach mainly involved motivating the user to carry out activities themselves and ensuring their safety while doing so. When the user had physical limitations or pain that impaired the implementation of activities, no assessment or initiatives were undertaken to target the underlying cause, and the activity was terminated.

A combination of both exercise- and activity-based training

Most of the reablement interventions included either activity-based or exercise-based training. However, in two cases (Table 1), we observed interventions that combined activitybased and exercise-based training in a specific, tailored manner. This specific, individual approach was described as paying attention to and correcting small details of movement, which was crucial for the users' quality of movement. As one HT said,

[...] all the small adjustments are really helpful. If you do it a little bit more like this, you will get a better angle for that muscle, and if you do it a bit more like this... that will be better ... you know (HT).

PTs	Experiences	HTs	Experiences	Users	Impairment and goals	Applied approach
1	<5 year as PT, 6 months in reablement	1	Nurse assistant, 5 years' experience in reablement	1	Hip fracture, aiming for personal hygiene, go to the mall, attend the day care centre, cook meals	Exercise-based training
2	>10 years as PT, 2 years in reablement	2	Nurse assistant, 2 years in reablement	2	Hip and upper arm fracture, aiming to walk outside	Combined training
3	>10 years as PT, 2 years in reablement	3	Nurse assistant, 1 year in reablement	3	Hip fracture, aiming to walking up/down stairs, walking outside, managing domestic tasks	Activity-based training
4	<5 years as PT, 1 year in reablement	4	Nurse assistant, 2 years in reablement	4	Multiple fractures in the back, aiming to walk up/down stairs, walk outside	Exercise-based training
5	>10 years as PT, 2 year in reablement	5	Nurse assistant, 2 years in reablement	5	General function decline, aiming to manage domestic tasks, and walk outside	Combined training
6	5–10 years as PT, 3 years in reablement	6	Occupational therapist, 2 years in reablement	6	General function decline, aiming to feel safe at home, walk up/down stairs, walk outside, travel by public transport	Exercise-based training
7	>10 years as PT, 1 year in reablement	7	Nurse assistant, 1 year in reablement	7	Stroke, aiming to walk inside without a walker, going to the grocery	Activity-based training

During observations, we observed that attention to these small details was crucial to achieve more efficient movement:

The PT instructed the user to walk up and down the stairs, which was one of the user's goals. The user was struggling to lift her knee high enough, and in order to compensate, she moved her hip in a circulating movement and leaned her upper body to the opposite side. The PT made the user aware of this and concluded that in order to be able to walk the stairs more efficiently, she would have to increase her hip flexor strength as well as the stability of her opposite hip. This observed compensating movement was fundamental for the reablement plan that the PT produced.

This example demonstrates how the combination of activity training (walking up and down the stairs) and exercises that emphasised quality of movement (strengthening hip flexion, one-foot-stance balance and technique) were implemented in reablement training.

Discussion

In this study, we aimed to investigate how PTs on reablement teams plan and adapt training interventions to increase users' functional abilities. We observed that there were three main approaches to reablement practices: a standardised approach including exercise-based training, a goal-oriented approach including activity-based training, and a combined approach including both exercise- and activity-based training. Rehabilitation involves relearning movement patterns or learning compensatory adaptive movement patterns to recover movement function. Newell and Verhoeven [30] claim that the principles of relearning and recovery of movement function in rehabilitation are the same as those of original motor learning. Hence, we will discuss our interpretation of our findings based on contemporary knowledge of motor learning, which emphasises the principles of intensity, specificity, transferability and meaningfulness [20]. Additionally, the results are considered within the framework of the ICF to elaborate how impairments, activities and participation can be embedded within a reablement setting.

Standardised approach including exercise-based training

The PTs who emphasised exercise-based training in the reablement interventions argued that this approach is suited to target balance and strength and allows for easy instruction and guidance of HTs and users. Exercise-based training programmes have shown effects on functional abilities, such as increased balance and muscle strength [31,32] and reduced falls [33–35]. Exercise-based training is also appropriate regarding [20] principle of *intensity* in learning since it is easy to quantitatively adjust load and repetitions. However, this study indicates that approaches that were limited to a focus on the quantity of training lacked individual adjustments concerning quality of movement.

One PT argued that the user, whose goal was to cook a meal, probably knew how to do the activity but lacked the physical functions to manage the task. Newell and Verhoeven [30] argue that relearning a previously acquired

task may require new and different trajectories of change than the original learning of the task. This argues for training initiatives that involve the relearning of movement patterns, particularly targeting the demands of the activity. This reflects the rehabilitation principle of *transferability* [36,37], which suggests that training should be directly transferable to activities involving the user's goals.

The elderly lady whose goal was to be able to walk outside could not understand the importance of walking sideways beside the kitchen counter. Although the user initially was asked the question 'what are important activities for you?' she was not directly involved in the decision of initiatives. The exercises made little sense to the user, who could not understand the connection between her own goals and the chosen measures. The user's actual participation in the decision-making process can therefore be guestioned. A systematic review [6], identified clear value to consider shared decision making within rehabilitation settings, which also corresponds with the motor learning principle of meaningfulness [20,38]. A lack of meaningfulness can weaken important elements of learning such as emotions and motivation. However, the exercise-based approach observed in this study was limited to constrained movements, focussing on the ICF aspect of body function and structure while omitting the principles of meaningfulness and transferability related to the activity and participation aspects of the ICF.

Goal-oriented approach including activity-based training

The PTs who argued for activity-based training emphasised that the approach targets users' goals, which relates to the core aspect of reablement services [2,3,39]. The initiatives in these approaches were clearly related to the activity and participation aspects of function according to the ICF. With regard to therapy, learning and relearning are most likely to occur when activities are meaningful and relevant to real life settings. Larin [40] argues that purposeful tasks are more appropriate than passive behaviours to promote motor learning. Based on behavioural neuroscience and contemporary models of motor learning, meaningful activities targeting the user's goals are described as essential to recover function [30,36,38,41]. Thorough insights into the user's individual motivation and integration of the user's goals in treatment have been reported to increase success compared with constrained movements selected by the instructor [40]. Sufficient motivation and attention are essential to promote engagement in the task, and meaningful improvement depends on task performance within the functional demands of a relevant environment [41].

The results of the current study revealed that approaches that exclusively involved activity-based training lacked the principle of specificity [20], which emphasises the underlying constraints and causes of movement impairments. An example from this study was when one of the PTs explained that sometimes it was necessary to 'give up' because of the user's pain or low physical capacity without assessing underlying impairments. While the goal-oriented approach fulfilled the principles of transferability and meaningfulness, corresponding to the ICF domains of activity and participation [17], the individual constraints of body function and structure were overlooked. Optimal function and quality of movement, which involve consistency, flexibility and efficiency, require adjustments and individually guided instructions that target both the functional performance of the task, as well as the body function and structure on a kinematic level [41].

Combined approach including a combination of both exercise- and activity-based training

Although most of the reablement initiatives observed in this study involved either a solely exercise-based or solely activity-based approach, we did observe some cases that combined the two approaches. PTs emphasised activities that were closely related to the users' goals, which reflects the activity and participation components of the ICF. In addition, they implemented exercises that directly targeted underlying movement impairments on a body function and structure level. Eliassen et al. [42] report that the content of reablement initiatives in the Norwegian context varies from rigidly standardised approaches to individually tailored approaches. The exercise-based training interventions that we observed in the current study correspond with the described standardised approaches, while the combined approach that this paper describes is in line with descriptions of the individually tailored approach [42].

Relearning functions that have been limited due to disease or injury may result in undesirable compensatory movement patterns that limit a person's movement effectiveness [41]. Irgens et al. [43] argue that physiotherapy practice needs to strike a balance between interventions aimed at the quality of movement and interventions focussed on coping strategies for daily activities. A combination of exercisebased and activity-based approaches may balance the quality and quantity of motor functions by tailoring interventions. All aspects of the ICF model are essential for a holistic perspective of functionality and should be included in both assessments and interventions.

Scholars support the use of a task-oriented approach in rehabilitation to enhance functional ability [44–47]. Task-oriented training is a contemporary intervention based on behavioural neuroscience and recent models of motor learning, which emphasise meaningful activities, consistency, flexibility and efficiency, and constraints to body function and structure [38,48]. Task-oriented training emphasises both quantitative and qualitative aspects of movement, as well as participation in roles, routines and habits [38], in line with our observations of the combined reablement approach.

Reablement - an ambiguous and indistinct service?

The variability and inconsistency of the initiatives that we observed in this study demonstrates the ambiguity in reablement services. The reablement literature has not defined the target group clearly, and the distinction between who should receive reablement and who would benefit from traditional services is not clear [4]. Hartviksen [49] states that reablement is a service within the domain of rehabilitation, prevention and health promotion. Standardised home exercise programmes have been documented to prevent several health issues among older people [31,33–35]. Exercise-based approaches are therefore assumed to be suitable for health promotion and prevention purposes. However, rehabilitation that aims to recover specific functional abilities requires a more specific and tailored approach.

Based on the principles of motor (re)learning, we argue that users with complex rehabilitation needs may require interventions that involve a combination of both approaches, targeting all aspects of the ICF. In reablement, HTs mainly carry out training initiatives. This personnel group does not necessarily have any rehabilitation experience or education [4,21]. Eliassen et al. [42] claim that in order to achieve individualised and tailored approaches, intensive involvement of PTs is necessary. However, the results in this current study demonstrate that PTs involvement alone is not sufficient hence, PTs need to be aware of the theoretical framework of motor (re)learning in their planning of reablement interventions.

Limitations

Our results are based on a limited number of participants and teams, and other ways of planning and adapting training initiatives in reablement services may exist. The variability within the material, however, provide insights into the inconsistency of the content of reablement approaches. A larger sample size would therefore potentially strengthen our results, and we argue that our results are highly relevant for other reablement settings with regard to analytic generalisations, in accordance with [50]. In this study, PTs and HTs were the main subjects. It may be a limitation that other professions were not studied in more depth. Interprofessional collaboration of other team members should be further investigated. Reablement users were not interviewed, which limited the expression of their perspectives to the informal conversations during the observations of user encounters, where they were present. We did not conduct any measures of the effect of the diverse approaches, which would require a different study design.

Concluding remarks

The aim of this study was to investigate and discuss how PTs on reablement teams plan and adapt training interventions to enhance users' functional abilities. The variety of initiatives in our results indicate that there is no consensus on the content that reablement initiatives should include. Our study revealed that approaches often tend to prioritise either exercise-based training or activity-based training.

Standardised approaches emphasising physical exercises may lack the principles of meaningfulness and transferability. An exclusively activity-based approach may omit the principle of intensity and attention to individual, specific aspects of efficient bodily movement. Motor learning and relearning require approaches involving both exercise-based and activity-based training, and a combined approach is preferable considering motor learning theory.

Implications for physiotherapy practice

There is a need to develop a theoretical framework that guides physiotherapy planning and adjustment of reablement initiatives. The ICF model corresponds well to the prevailing principles of motor learning and relearning, which make it a suitable tool not only for classifying function and disability but also for planning and adjusting reablement initiatives, accordingly an approapriate framework for PTs in reablement services. The principles and theoretical foundation of the task-oriented approach (cf. [46]) is in line with our suggestion for a more holistic and combined approach to reablement and may serve as an appropriate approach. However, this claim is based upon our theoretical interpretation, and empirical evidence is needed to make assertions about effects or whether the approach is suitable in the context of reablement services.

Note

1. The exercises referred to are part of an evidence-based exercise program that includes four exercises that target leg strength (51).

Ethical approval

This study was approved by the Norwegian Centre for Research Data (reference number 44747). All data were collected in accordance with the Helsinki Declaration [51]. Participants provided written consent before the data were collected.

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Disclosure statement

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

Author contribution

ME planned the study design, acquired the data material, conducted the analysis, and drafted the manuscript. AL contributed in the analyses and discussions, revised the manuscript critically several times. All authors qualify according to the criteria from ICMJE (International Committee of Medical Journal Editors).

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