Interdisciplinary collaboration experiences in creating an everyday rehabilitation model: a pilot study

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Background: When functional impairment occurs, assistance to achieve self-help can lead to qualitatively more active everyday life for recipients and better use of community resources. Home-based everyday rehabilitation is a new interdisciplinary service for people living at home. Rehabilitation involves meeting the need for interprofessional services, interdisciplinary collaboration, and coordination of services. Everyday rehabilitation is a service that requires close interdisciplinary cooperation. The purpose of this study was to gain knowledge about employees’ experiences with establishing a new multidisciplinary team and developing a team-based work model.

Method: The study had a qualitative design using two focus group interviews with a newly established rehabilitation team. The sample consisted of an occupational therapist, two care workers with further education in rehabilitation, a nurse, a physiotherapist, and a project leader. Data were analyzed by thematic content analysis.

Results: The data highlight three phases: a planning phase (ten meetings over half a year), a startup phase of trials of interdisciplinary everyday rehabilitation in practice (2 months), and a third period specifying and implementing an everyday rehabilitation model (6 months). During these phases, three themes emerged: 1) team creation and design of the service, 2) targeted practical trials, and 3) equality of team members and combining interdisciplinary methods.

Conclusion: The team provided information about three processes: developing work routines and a revised team-based flow chart, developing team cooperation with integrated trans- and interdisciplinary collaboration, and working with external exchange. There is more need for secure network solutions.

Keywords: everyday rehabilitation, focus groups home-based rehabilitation, interdisciplinary teamwork

Introduction

This paper describes a study on the creation of an interdisciplinary model of team-based, home-based rehabilitation (everyday rehabilitation) in a municipality in central Norway. Expectations in the Norwegian welfare state are to help people living at home use their own resources most effectively. When functional impairment occurs, assistance to achieve self-sufficiency can result in qualitatively good results for recipients and improved use of community resources.1 Municipalities are encouraged to try new approaches and find new ways to provide effective care.2 In Norway, home-based “everyday rehabilitation” is a new interdisciplinary service in line with the aforementioned political guidelines.1-3 Various labels have been attached to rehabilitation for people living at home, including reablement,4,5 restorative care,6
and home rehabilitation.\textsuperscript{7} Restorative care, for example, is described as a philosophy and caring perspective aimed at teaching older people to compensate for functional impairment and achieve levels of performance positively affecting physical and psychological health and quality of life.\textsuperscript{8} Mental well-being and physical well-being are two of the cornerstones in the concept of optimal functionality for older people.\textsuperscript{9}

The term everyday rehabilitation/home-based daily life rehabilitation is used in Scandinavian countries to describe rehabilitation that teaches older people living at home master their own lives and remain independent, self-reliant, and active as long as possible.\textsuperscript{10–12} The target group for everyday rehabilitation is adults living at home who experience challenges in mastering everyday activities and who are expected to benefit from rehabilitation in the home.\textsuperscript{12}

Traditionally, health care institutions have profession-divided organizing with functional differentiation and cooperation across trades. By virtue of expertise, each profession is responsible for “vocational typical” tasks. According to Tuntland and Ness,\textsuperscript{13} everyday rehabilitation is a service that requires close interdisciplinary cooperation. Rehabilitation efforts involve meeting the need for interprofessional services, interdisciplinary collaboration, and coordination of services.\textsuperscript{14,15} Strøm and Fagermoen\textsuperscript{16} found two contrasting types of collaboration in sharing information characterized by the absence of dialog or by mutual knowledge sharing. A review study showed the impact of communication and relationships between professional groups that considered variation in the form of quality.\textsuperscript{17} Teamwork is considered more effective than services provided by individual personnel.\textsuperscript{18,19}

Various models of teamwork have been identified in which caregivers from a variety of disciplines work together.\textsuperscript{20,21} The degrees of cooperation vary from working in a multidisciplinary team to working in a functional interdisciplinary team.

One teamwork model is to organize collaboration in transdisciplinary teams. Roles and responsibilities within the team were shared without regard to professional affiliation. Individual occupational groups should not hold on to the respective professional group’s traditional tasks, and the professions’ expertise must be made available to other team members.\textsuperscript{22}

Another model is to organize interdisciplinary teams where all professions in the team collaborate on goal setting, planning, and evaluation. Within the team, they share responsibilities to achieve the patient’s rehabilitation goals. To perform tasks, they use their professional expertise and may work independently with their professional tasks. Interdisciplinary collaboration helps to determine and achieve common goals.\textsuperscript{22} The fact that cooperation between various professions is equally important to jointly achieve these common goals is considered significant.\textsuperscript{23,24} Functioning in an interdisciplinary way like this presupposes both job-specific and teamwork skills, a high level of understanding and respect across professions, and recognition of private and shared responsibility in achieving objectives.\textsuperscript{22,25,26} In everyday rehabilitation, interdisciplinary cooperation contributes to the development of both a shared interdisciplinary knowledge base and recognition of the special expertise each team member offers.\textsuperscript{27}

The offer of new holistic rehabilitation services to elderly people living at home demonstrates the need for knowledge about interdisciplinary models that promote the everyday coping skills and ability of the elderly to continue living in their own homes. This study provides knowledge about ways to collaborate when developing and establishing team-based everyday rehabilitation. What are the relevant experiences of a newly established team that develops and establishes an interdisciplinary work model in everyday rehabilitation? How does the team experience their collaboration process? Can they establish an interdisciplinary model that they believe is appropriate in everyday rehabilitation?

The purpose of this study was to gain knowledge about employees’ experiences with establishing a new multidisciplinary team and developing a team-based work model.

Method

The pilot study has a qualitative design using focus group interviews with a newly established rehabilitation team. Focus group interviews are appropriate to investigate specific topics and learn about social--psychological factors and patterns of thinking and acting in the workplace culture.\textsuperscript{28,29,30}

Sample and sampling

Everyday rehabilitation of this project took place in a medium-sized Norwegian municipality (20–30,000 inhabitants) in autumn 2014. The municipality employing a multidisciplinary rehabilitation team gave no chargebacks on how to organize interdisciplinary cooperation. The expectation was that the team itself would develop a model for interdisciplinary cooperation. The study sample was composed of six women (and no men) on the new team, led by a project manager. Apart from the project manager, the sample consisted of an occupational
therapist, two care workers with further education in rehabilitation, a nurse, and a physiotherapist.

The team was recruited from within the municipality, which made planning work for the project possible an integral part of jobs they had before their appointment to the rehabilitation team. In contrast to their previous work within their respective professions, the study required them to work across disciplines. The focus group was homogenous in that the newly established team worked together on planning and establishing a new service: everyday rehabilitation.

The head of health services in the municipality provided oral and written information about the study and then provided a request to participate in the research. All six women who were asked agreed to participate in the research.

Data collection
Two focus group interviews were conducted. The first interview was conducted 2 months after the start of the intervention. The second focus group interview was conducted 6 months later, that is, 8 months after the daily rehabilitation began. A thematic interview guide was used. An example question from this guide was, “What are challenges and possible new solutions for collaboration that the team has experienced?” Data collection was conducted by two researchers. One of the researchers, a highly experienced moderator, guided the conversation, while the other observed, summarized the discussion, and provided suggestions and questions based on information that emerged. Interviews lasted for 115 minutes and 140 minutes, respectively.

Analysis
The data were transcribed word by word. The complete data material was read in order to get an overall impression of experiences when establishing a new interdisciplinary model for teamwork. The next step was to analyze the material thematically for subthemes and themes that emerged in the three different phases of the team-building process. As shown in Table 1, the analysis provided an overview of the theme and subtheme for the planning, testing, and subsequent 6-month trial of interdisciplinary rehabilitation practice.

In the next step, we used Lewis’ model of interdisciplinarity. The input factors were recognition of group membership, framework for cooperation, and skills of the participants. The central processing factors were identity negotiation, maneuvering the mutual exchange of information, and practical cooperation skills. The output factors were the completion of objectives and ways of allocating tasks and combining individual work and cooperation.

The team’s progress through the three phases (planning phase, startup phase, and implementation phase) were considered in light of this theory and research to interpret the findings, Figures 1 and 2.

Ethical considerations
Ethical approval for the study was obtained from Norwegian Social Science Data Services (Ref number 40186). Voluntary participation was based on written and verbal information. The data were anonymized to safeguard the interviews and prevent illustrative examples of statements from being traced back to specific individuals.

Results
Themes developed about the planning period focused on team creation and design of the service. Targeted practical trials emerged as a theme after the planning period, and equal team members combining interprofessional work emerged as a theme during the implementation phase.

| Table 1 Planning, startup, and implementation phases with themes and subthemes |
|-------------------|-----------------|------------------|
| Phase one: Planning | Team creation and design of the service | Team building, enthusiasm, and mutual confidence |
| Phase two: Startup | Targeted practical trials | Innovation and activity-sketching |
| Phase three: Implementation | Equality of team members and combining interdisciplinary methods | Developing procedures and interdisciplinary work |

Coordination challenges
Established practice and cooperation within the team
Equality and interdisciplinary sharing

Team creation and design of the service
Factors relevant to establishing an interdisciplinary working relationship included contextual factors and factors of team members. The newly formed team had a mandate to establish and experiment with everyday rehabilitation as an interdisciplinary service. They were not given guidance on how the interdisciplinary work should be organized and operated. External expectations for the project were high, and the municipal management expected results from the new rehabilitation service.

Team building was emphasized. They decided early on that they should work closely in an interdisciplinary way and had a common intention to develop rehabilitation services in the community: “The framework we have and relate to, and how they should be completed, we shall shape together”.

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Figure 1 Workflow development during phase two.

It was a common motivation for the team to establish an interdisciplinary collaboration to reach the service recipient’s rehabilitation goals of everyday coping. They went on excursions to other municipalities and learned about how other municipalities worked with everyday rehabilitation. Foremost was cooperation within the team, and learning about other professions was highly motivating for the participants.

The participants were enthusiastic to establish common “membership” in the team and felt that the whole group was filled with enthusiasm, courage, and humor. They communicated openly about mutual expectations and values that would be the basis for cooperation. Cooperation should be based on equality, and so they decided that everyone would be equal, having the same values, thereby leaving none of them vulnerable. The care workers had the shortest vocational education, but they felt that they were included as equals. Everyone was keen to create safety in the team. Professional identities seemed to be decisive for the individual reactions among team members when they established an office landscape with limited office space for each one. Participants

Figure 2 Workflow development during phase three.
who were used to having their own office were less satisfied, especially because their conversations were distracting when working individually. Some hung noise-reducing curtains that seemed to help. The team found a solution to the conversational noise by having regular times for talks and meetings.

The meetings during the planning period were important for establishing mutual confidence and getting to know to each other:

We had meetings; the team met face-to-face. Even though I knew all the members of the team but two – those it was important months because we became comfortable with each other, knew each other’s background, and this time gave us ideas about how to start up; we prepared ourselves a bit.

Team building and creative work led to a feeling of community and the confidence to take up current issues in the group. Eventually, they were confident in each other and their knowledge areas.

In the planning phase, the informants developed the team’s vision for the rehabilitation service. They put words on a basic person-centered perspective by using a huge tree made of paper. They wrote keywords and issues that were important to remember about everyday rehabilitation. They worked to change the mode of thought from compensatory help to focusing on the recipient’s goals and interdisciplinary assistance needs. Working with rehabilitation, they would think creatively and in an interdisciplinary way about reaching the user’s goals when the recipient was involved in the activities.

We have been involved from the start. We had an opportunity to understand that a company must somehow change its mindset and motivate themselves to think differently, in a creative and interdisciplinary way that is slightly different from traditional methods.

All team members played an active role. They exchanged information and worked with innovation and organization and focused on the position of the rehabilitation service in relation to other municipal services. During the planning phase, the working methods were not planned in detail, but the team made a flowchart for the rehabilitation process that was scheduled to last 4–6 weeks. They worked a little with practical planning at the end of the plan period. The method of cooperation on rehabilitation tasks was not established at this stage: “First, we have to have some experience in this”.

To inform potential patients about the new offer of care, they made an information brochure and began to inform home nursing care personnel and participated in their meetings. Journal recording with documentation, adaptations, and coordinated information between the team and other services was a field for which they had not found good solutions during the planning period.

In summary, the team members became familiar with each other, discussed and came to solutions for collaboration to create equality among team members with various occupations, and developed a common thinking of the team’s functioning and rehabilitation mission.

Targeted practical trials
After the planning phase, phase two began with the offer of everyday rehabilitation services with patients. The second phase had a 2-month duration.

The team experienced a chaotic startup with offers to recipients. They had not decided about how the individuals on the team would work and how to organize their cooperation. Everybody was working to achieve a more structured service and more proper conditions for rehabilitation, changing information, and cooperation in providing rehabilitation on the basis of their common thinking about meeting patients’ goals, and “there was much new to familiarize themselves with”. They tried out a working model where they shared responsibilities, but for each patient, one of the team had the role of a primary contact. The primary contact followed up responsibilities for the individual patient. The team members soon found it useful that more of the team than the primary contact visited each recipient. The employees gave their professional views on the rehabilitation program: “We were very determined that anyone can visit the user and see the needs, but not with ‘the same eyes’”. Home visits required several types of competence.

It was advantageous that everyone in the team would independently perform all practical tasks. Some team members worked more than others with mapping, especially those with knowledge and experience with such tasks from previous professional practice. In the beginning, the distribution of work on the mapping tasks was vocational, but this was something the team wanted to correct. Therefore, they trained by working two and two together on home visits with mapping. Those who taught others about the use of mapping first watched a colleague use the tool. Then, further training occurred in practice when the one training did the mapping while the expert was present and supervised.

The opportunity to make home visits in pairs provided an experience of working purposefully in an interdisciplinary way, and they became well known to each other during practical work in patients homes. More of the participants on the team knew the rehabilitation programs and could take on
tasks for the next home visit that gave flexibility to the team’s overall workflow. Nevertheless, they felt that the entire team should not all work with a single user: “It gives confidence that there are not too many visiting the individual”. The team discussed procedures with service recipients and decided that a maximum of three team members should participate in visiting each individual client.

After 2 months, the team had much in place when it came to the development of working routines. They were working with a revised flowchart, and more details came into focus. From having slightly different modes of thought in the beginning, they felt that they were beginning to develop a common way of thinking.

We were discussing our experiences and looking for solutions along the way. We notice that we work very well together to achieve the user’s goal[...] Fun to be working against the other (professions) and see some other solutions on things, when we discuss solutions.

Working with the computer system and the medical documentation led to some frustrating experiences for the team. A separate tag for everyday rehabilitation was not created, and so the team was not sure how to document this. They struggled to find a way that would work for them. In particular, they had to document where home nursing care found this information, because the team did not work at evenings, nights, or on weekends. They expressed that their previous jobs were useful in this cooperation: “This was much more important than I believed in advance, the informal interaction course that exist”.

The team used networks that aimed to impart relevant patient-centered information. They did what they felt was right and worked both for the patients and for the homecare district, because they were working closely with them and some recipients.

Figure 1 illustrates workflow development during phase two. In summary, now they worked both in a multidisciplinary and transdisciplinary manner. Through a shared vision of achieving patient goals during home visits, they had tried out and made experiences with collaboration and working methods and developed a structure for the rehabilitation program.

Equality of team members and combining interdisciplinary methods

The theme for the final phase was values rooted in interprofessional everyday rehabilitation. This theme refers to their experience of having established a working relationship of cooperation, equality, and interdisciplinary work. The use of a primary care contact worked well: “The primary contact is well established with a checklist of what each worker does. Accountability leads to progress in these cases. I think it is one of the success criterion that we actually made progress”.

They acknowledged what they had achieved, while still being concerned that they needed a better system to capture who was responsible for what. They felt it was important to clarify their responsibilities and clear up any uncertainties in the process.

Combining primary contact responsibilities and collaborating across professions gave rise to identity negotiations in the sense that each team member wanted to do a good job as a primary contact. They had an on-going dialog and mutual exchange of information when home visits were discussed, and they invited everyone to be involved. This openness led to an even clearer focus on actively using several vocational qualifications in the interprofessional rehabilitation. They began to feel like they were truly working in an interdisciplinary way. The ability to discuss the primary contact system and share feedback, questions, and tips pushed the team forward. They structured their working day and carried out interdisciplinary conversations with service recipients at scheduled times. There were usually two team members on the first home visit, and they had multidisciplinary meetings once a week, although this was usually too long to wait. Eventually, they decided to have regular reports twice a week. They needed to structure their meetings so that they were not talking about all recipients in every meeting. If they needed to discuss something from home visits, they noted it and discussed it the next morning when they had time for such meetings.

Equality, interdisciplinary work, and quality of service established were “clues” that resulted in a type of work with a combination of primary contact and multidisciplinary collaboration on daily tasks and interprofessional collaboration to create quality through mutual sharing of vocational competence.

We had discussions about solutions along the way and how to make the best use of our experiences. We noticed that we work very well together to achieve the recipient’s goal[...] It was fun to be working in other (professions) and seeing other solutions to things, not to mention that it was good to discuss the core issues back at the office.

The team felt they were innovating and had the experience of working well as a group.

They developed a system for documenting rehabilitation activities. They found it a bit unique to use templates,
structures, and a system they had created themselves, but it allowed them to review everything they had learned along the way.

Documentation for everyday rehabilitation was still a challenge after the 2-month planning period. After 8 months of practice, they found an arrangement by writing summaries, which were available for everyone, instead of typing up the synopsis. To ensure information flow, they wrote messages in addition to the formal documentation system. They wrote these messages in a “blue book” that home nursing care used to exchange important messages. This system seemed to work successfully for the team.

Value anchoring interprofessional everyday rehabilitation was achieved through the joint venture. Their values were equality and shared responsibility. Interdisciplinary work combined primary contact, multidisciplinarity, and interprofessional collaboration. Work practices and routines were found to work. The team showed mutual respect for professional expertise and experienced working in an interdisciplinary manner.

Discussion

The results provided information about the establishment of a multidisciplinary team, development of team-based work, and the appropriateness of interdisciplinary models for everyday rehabilitation. The findings show a level of development from the phase of creating a cooperative basis for equitable business development, straight through to the targeted trials of working in practice. They also offer a detailed description of value-based interdisciplinary everyday rehabilitation that combined multiple forms of cooperation.

Team building was an important part of the process during the planning period. This could be strengthened by mutual sharing of knowledge. This interaction seems to be essential to establishing confidence and getting to know each other. Acceptance and respect between members are critical for success with the development of interdisciplinary teams.

It might have helped that the participants were motivated and enthusiastic. They had the confidence of municipal management, which may also have contributed to their enthusiasm for achieving their team goals. The foundation of the team was consistent with the philosophy of everyday rehabilitation to recognize the special expertise of each team member, while also developing a common, interdisciplinary knowledge base, in line with what was described by Hartviksen. By focusing on equality in cooperation, the team created a shared direction for the development of professional understanding and mutual support, which proved to be an essential element of successful interdisciplinary cooperation. Indeed, the ability to cooperate with other team members seems to be an important factor in interdisciplinary development. The team had a shared motivation for equal work, with innovation and trying out a new way of working in line with governmental guidelines, to find new ways to solve caregiving challenges. They had to “change their mindset” when they were developing a service based on resource thinking rather than traditional compensatory caring thinking. Everyday rehabilitation aims to strengthen home residents so that they can master their own existence and experience an active everyday life. The team’s collaboration in this initial phase seems to have emphasized the team’s own values for the new activities, rather than concrete planning of practical rehabilitation tasks. This was outlined by the flowchart, which later had to be revised.

The basis of common thinking developed in the first phase, while they collaborated on developing procedures and an interdisciplinary work despite some chaotic experiences in the beginning. The employees explored skills in collaboration and conflict resolution. This is considered an important aspect in the development of interdisciplinary work. Participants in this study decided to use a primary contact system, but the individual responsibility was shared. Roles and responsibilities were assigned without regard to professional affiliation.

A variety of teamwork models have previously been described in the literature. The need for interdisciplinary work in everyday rehabilitation is underlined, but the development of models for such interdisciplinary work is only sparsely described in the corresponding literature on everyday rehabilitation. In the beginning, each team member worked with tasks with which they had knowledge through previous professional activities, especially mapping functions and factors giving rise to the rehabilitation needs of patients. The municipality’s guidelines for intervention implied that the team should develop a multidisciplinary approach that encouraged team members not to hold onto the traditional tasks of their professions. Home rehabilitation as teamwork will provide “hands off” support in a home environment through work across professional boundaries to coordinate resources and allow team members to learn from each other. At this stage, the team decided that they all should learn to perform all practical rehabilitation exercises so that they could become more flexible with resource coordination. Learning from each other gives rise to transdisciplinary collaboration, which provided the basis for flexibility in resource coordination for the entire team.
The team experienced several favorable signs when visiting patients. They gained a different professional outlook on the objectives and approaches in rehabilitation programs for individual patients. The fact that several professional groups can collaborate on goal achievement is considered to be a key factor in rehabilitation, and this seems to form the basis for the team’s development of interdisciplinary work habits. This study showed that the team also needed to have good cooperation with external actors. In this field, the team used the competence of the individual members in the development of common solutions to challenges. This underpins thinking about teamwork being more efficient than services given by separate providers.

The everyday rehabilitation service became more structured and the arrangement became better organized with values rooted in interprofessional everyday rehabilitation. Team members worked together with integrated thinking, and later, more concretely working with the model they developed for interdisciplinary everyday rehabilitation. Collaboration can be organized in a variety of ways. The working methods developed by the participants included a combination of primary contact, interdisciplinary cooperation, and trans- or interdisciplinary practice, with the use of each team member’s professional expertise in targeted everyday rehabilitation. Several ways of working gave various dimensions to their quality of service.

Cooperative skills, adaptation, and participation in changes are considered essential competencies in developing interdisciplinary teamwork. Implementation of collaborative models depends on the organization’s vision of change and its ability to facilitate that change. The external frame – and the freedom to develop a model of cooperation – seemed to lead to a common motivation for targeted cooperation. The team used this to understand and articulate common values for the work they would perform. Significant process factors for the development of such work include identity negotiation, maneuvering the mutual exchange of information, and practical cooperation skills. Core values were an important guideline for this cooperation. To succeed with the team development, it seems that their work with values, equality, and respect for each other’s professions and experiences were critical factors for success. This is supported by Leathard, as well as Fewster-Thuente and Velsor-Friedrich, who highlighted the respect for profession-specific and occupational identities, with an agreement on common goals for a value-based interdisciplinary service. The team had common expectations for everyone to participate, share their knowledge, and show flexibility and responsibility in new roles in which they were primary contacts and worked with tasks across their disciplines. As Leathard also highlights, the role of flexibility and knowledge sharing is important for successful interdisciplinary cooperation.

**Method discussion**

The study describes a team-building process in a newly established team with a new assignment in the municipal health service, and there was no equivalent service to compare with. This everyday rehabilitation project was limited to one interdisciplinary team. This provided an opportunity to carry out the pilot study, following the development of team building and a working model with a limited sample size. Studying the typical case using the group dynamics of focus group interaction was a way to identify common issues that individuals experience, still with limitations due to only two focus group interviews. When more everyday rehabilitation services are established, a grounded theory study is recommended. Comparative studies of more rehabilitation models are also recommended.

The analysis was conducted by two scientists. First, they reviewed the data separately, and then they met and discussed the formulation of the findings in the study. This paper was started by the first author who formulated the rough material, while the other authors collaborated on completion of the manuscript. Credibility was ensured by recording descriptions as richly and robustly as possible.

**Conclusion**

The team provided information about three processes: developing work routines and a revised team-based flowchart, developing team cooperation with integrated trans- and interdisciplinary collaboration, and working with external exchange. There is more need for secure network solutions.

Taking equality between professions seriously seems to give results in terms of effective collaboration with integrated use of various professional skills in problem identification and interactive rehabilitation planning. A cooperation model based on several forms of interdisciplinarity seems to function in home-based rehabilitation. This pilot study shows that the model is advantageous in developing better communication among team members. These points can be significant for the development of effective teamwork in Norwegian municipalities. Further research on these assumptions is needed. Knowledge about user perspectives on this rehabilitation model would also be an important feature of future studies.
Disclosure
The authors report no conflicts of interest in this work.

References