“I have to be patient” – A longitudinal case study of an older man’s rehabilitation experience after hip replacement surgery

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Abstract

Background: Aging can bring about an increased risk of disability. Following illness or injuries, rehabilitation is essential if the individual affected is to attain and maintain independence. Performing rehabilitation with a person-centered approach is vital for positive outcomes. Health providers are increasingly interested in developing rehabilitation services in outpatient settings for older people in their own homes.

Aim: The aim of this study was to describe an older man’s rehabilitation experience after a hip replacement surgery.

Design: A longitudinal qualitative descriptive single case study.

Methods: Interviews were conducted on four occasions with the participant in his own home. The interviews were conducted one month, seven months, one year, and five years after the patient was discharged from the hospital. The data were analyzed using qualitative content analysis.

Results: Three categories emerged: (i) having feelings of despair, (ii) being in charge, and (iii) having rehabilitative support. The results demonstrate the participant’s decreased ability to walk after a complicated hip surgery, and his physical and psychological struggle for well-being in everyday life. A strong motivation to return to as normal a life as possible facilitated the rehabilitation. Also, a supportive family and accessible health care professionals were essential to the positive outcome of the home rehabilitation.

Conclusion: Rehabilitation can extend over a long period to maintain and improve mobility. Also, living with a disability causes feelings of despair. The home can be a source of energy but also a place of challenges during rehabilitation. To support older people in achieving their rehabilitation goals and engaging in meaningful activities, professionals should focus on personal factors, psychosocial support and on influential factors in the home environment and in society in general.

Key words
Older people, Rehabilitation, Case study, Home
1 Introduction

The rehabilitation of older persons is an important part of health care services [1] and is essential to meet the challenges of an aging population [2]. Aging produces growth and losses as well as an increased risk of disability [3, 4]. Helping people age actively and achieve an independent life are key issues for health policy makers, health providers, and health professionals [5]. Rehabilitation is an active, dynamic, and continuous process including physical, social, and psychological aspects [6]. If there are complex health care and social needs, rehabilitation can require life-long adaptation [7]. Maintaining independence and performing meaningful activities in a well-known environment such as the home is an essential aspect of rehabilitation for older people [8]. Webber [9] emphasizes that mobility impairments can lead to hindrances in accessing different life-spaces, and that key determinants of overall mobility include cognitive, psychosocial, physical, environmental, and financial factors.

In the rehabilitation process, a person-centered approach is challenging to adopt [10, 11]. The personal context, as well as the social context, is a focus in rehabilitation [12, 13]. According to Cott [14], client-centered rehabilitation encompasses more than mere goal setting between patients and professionals; rather, it also refers to an approach tailored to meet the individual’s particular needs and enhance client participation. McCormack [15] argues that there are four key characteristics that highlight the complexity of person-centered practice for older individuals: (i) being in relation, (ii) being in a social world, (iii) being in place and (iv) being with self. The challenge in everyday practice is to establish an interconnected relationship with older people and their significant others. McCance et al. [16] indicate that the current focus on person-centeredness demonstrates the social intention to adopt an approach that balances the medical dominance of health care with a more holistic approach. The authors suggest a framework that can be used in practice to enable nurses to explore person-centered care. Leplege et al. [17] point out that the concept of person-centeredness is used to cover aspects of rehabilitation, where person-centeredness can have several meanings, such as: to address the person’s specific and holistic properties, to address the person’s difficulties in everyday life, to consider the person as an expert on their own condition, and to respect the person “behind” the impairment or disease.

One favored model of rehabilitation is the International Classification of Functioning, Disability, and Health [ICF] [18, 19]. Based on an integrative biopsychosocial model of disability, the ICF includes the following components: body functions and structures, activities, participation, environmental factors, and personal factors. According to the ICF, activity is the execution of a task or an action by an individual. Participation is involvement in a life situation. Environmental factors are concerned with the physical, social, and attitudinal environment in which people live [19]. The ICF model is useful for holistic nursing principles as well as for rehabilitative nursing [20]. Nursing rehabilitation involves coaching patients to engage in self-care [21, 22] through a holistic practice that emphasizes the close connections between mind, body, and spirit [20].

Health care services, though organized differently in different countries, share the characteristic of involving many different actors [23]. This means that people in need of rehabilitation services must guide themselves through different organizations and professionals to find the resources that can support them. A recent study shows that a team approach can facilitate the ability to meet older people’s needs in their homes [24].

Studies have been conducted exploring older people’s experiences of rehabilitation in in-patient settings [25, 26], rehabilitation during the first year at home after a spinal cord injury [27], and older orthopedic patients in hospitals’ perceptions of individualized care [28]. Studies have shown the influence that professionals have on a patient’s rehabilitation [29], the need for guidance from competent personnel [30], and the importance of support from family members for older people receiving home rehabilitation [31]. However, there is limited knowledge about how older people experience rehabilitation over time and how older persons living at home after being discharged from the hospital perceive rehabilitation service. Knowledge in these areas will increase professionals’ ability to design rehabilitation services that enhance older individuals’ quality of life and help guide professionals in designing effective rehabilitation programs in general.
Aim
The aim of this study was to describe an older man’s rehabilitation experience after hip replacement surgery.

2 Methods

2.1 Design
The design for this study is a qualitative descriptive single case study [32]. The longitudinal design using data from interviews [33] was chosen to capture the participant’s experiences from the time he was discharged from the hospital to five years after the operation.

2.2 Participant and setting
The participant, Eric (a fictitious name), was a sociable, articulate, and expressive 78-year-old widower living alone. He was engaged in several social activities, physically active, and in overall good health, although he was bothered by hip pain. He took medicine for heart failure. Eric was in close contact with his children and grandchildren and they visited each other often. He also enjoyed spending time with neighbors and friends. He lived in a comfortably furnished apartment near a small city. This active older man, who lived an independent life, underwent planned hospitalization for hip replacement surgery. Afterwards, his daily life changed dramatically.

The participant for this study was selected from among participants identified in a previous study who had home rehabilitation experience [34], with the inclusion criteria of being 65 years old or older, having been treated at a clinic for illness or injury, having an estimated time for rehabilitation at home of more than four weeks, and being able to speak Swedish. Our intention was to select a person who could provide knowledge and information, in the context of Swedish society, about an older person’s rehabilitation experience. Swedish old age policy emphasizes “aging in place”, which means that older people should be able to live independently in their own homes. Health care in Sweden is public and provided by local self-government (county councils and municipalities). Depending on the individual’s needs, rehabilitation services are offered at different levels in the health care system. This study was performed in a municipality in northern Sweden, including a small city and the surrounding countryside. At the time of the study, health care services in the municipality, including rehabilitation for older people at home, were provided by multidisciplinary teams. Each team included professionals such as a physiotherapist, occupational therapist, district nurse, nurse assistant, home help, a home help officer responsible for needs assessment, and a home help officer in charge of home care. Medical services were provided by doctors in primary care and at the hospital.

2.3 Ethical considerations
The study was approved by the Ethics Committee of the Medical Faculty of Umeå University (Dnr 05-040M), Umeå, Sweden. The participant received information about the aim, method, and voluntary participation in the study. The participant was assured that the data would be handled with confidentiality. The participant gave written informed consent. To protect the participant’s anonymity, a pseudonym was used in the transcribed text. There was no conflict of interest or dependence between the participant and the researchers.

2.4 Data collection
Eric was interviewed four times in his own home by the first author. The interviews were conducted at one month, seven months, one year, and five years after he was discharged from the hospital. The interviews were carried out in order to follow-up on Eric’s rehabilitation experiences. Eric was asked to narrate his rehabilitation experience. Eric was posed questions such as “Please tell me about your experiences of rehabilitation,” and “How are you now?” Probing questions were asked, such as “Please tell me more” and “What happened next?” The content of the interviews covered topics such
as activity, participation, bodily function, environmental factors, and personal factors that were considered to be important cf. [19]. All interviews concluded by asking “Is there anything you would like to add?”

A longitudinal design was employed to obtain a detailed and nuanced perspective on Eric’s rehabilitation, as a way to follow-up on his experiences, and as a way to enable him to expand upon statements he had made in previous interviews. The interviewer’s intention was to make Eric feel safe and to create an atmosphere that encouraged him to speak freely and to narrate in his own words. It was easy for Eric to talk about his situation and experiences during the interviews. Interviews lasted between 40 and 90 minutes, averaging 55 minutes. All interviews were audio-taped and transcribed verbatim by the first author.

2.5 Data analysis

The data were analysed using content analysis [35]. First, all interviews were read several times to acquire a sense of the message. Second, the text was divided into meaning units, consisting of a sentence, several sentences, a paragraph, or several paragraphs with similar meanings. Third, the meaning units were condensed by shortening the text while still preserving the core meaning, and then the units were labelled with codes. Fourth, the codes were compared to find similarities and differences and grouped together into three categories.

Finally, in each of these categories, a chronological coding was performed in order to capture the changes that may have occurred through time.

Overall, the analysis revealed that Eric highly prized the ability to walk and move around. In order to illustrate this aspect over time, a coding was performed. The coding was guided by the ICF coding rules for the component activity, with the category moving at the third level item, using the performance qualifier (first qualifier) [19] (see Table 1). The qualifiers were 0 - no difficulty, 1 - mild difficulty, 2 - moderate difficulty, 3 - severely difficult, and 4 - complete difficulty. The option to use the capacity qualifier (second qualifier) was not taken in this study. Therefore, the unused space was left blank (that is, “_”), as stated by the coding guidelines for ICF [19].

Table 1. Overview of the ICF code moving emerged in the analysis

| ICF domain | ICF chapter | ICF category title | ICF cod second level | ICF cod third level | Qualifier at one month | Qualifier at seven month | Qualifier at one year | Qualifier at five year |
|------------|-------------|--------------------|---------------------|-------------------|-----------------------|-------------------------|----------------------|-----------------------|
| Activity   | Mobility    | Walking and moving | a4600 Moving around in different locations | a46000 Moving around within the home | a46000.3 Severe difficult | a46000.2 Moderate difficulty | a46000.1 Mild difficulty | a46000.1. Mild difficulty |
|            |             |                    |                     |                   |                       |                         |                      |                      |
|            |             |                    |                     |                   | a46014 Complete difficulty | a46013.3 Severe difficult | a46012 Moderate difficulty | a46012. Moderate difficulty |
|            |             |                    |                     |                   | a46024 Complete difficulty | a46023.3 Severe difficult | a46022 Moderate difficulty | a46022. Moderate difficulty |

To ensure credibility, as one aspect of trustworthiness [36], the process of analysis involved back-and-forth movements between the whole text, meaning units, codes, and categories. The interpretation of the text was carried out by the first author and confirmed by the co-authors.
3 Findings

Eric’s rehabilitation experience involved his past, present, and expectations about the future. Three categories emerged in the data: (i) having feelings of despair, (ii) being in charge, and (iii) rehabilitative support. The categories are described below and illustrated by quotes from the transcripts.

3.1 Having feelings of despair

Eric described the day of his hip surgery as a turning point in his life. Eric was shocked to realize that he had no function in his left leg below the knee the day after his surgery. A neurological examination showed a lesion of the nerve and reduced muscle activity in his left leg below the knee. Eric described the event as follows in the first interview. “It was a hip operation. I had had the operation once before, so I knew that I would not be able to lift the leg immediately after the surgery while I was still in bed. But this time I had no sensation at all in the leg. It seemed dead! I went to the hospital to get rid of my hip pain, but instead, I woke up worse off. No, now I have to learn to walk again.”

Eric was discharged from the hospital in the early summer after an intense period of physical therapy. He was referred to a multidisciplinary team in the municipality for further care and treatment. When he arrived home, he had limited ability to walk and difficulty with balance, which hindered his daily activities. He related that he required support to walk. “I have to wear an orthopedic support that stabilizes my leg and holds up my foot. Also, I use a cane while indoors and a walker outdoors. They are completely indispensable for me.” Eric related that he often fell in his apartment during his first month at home, which terrified him and caused him pain. “I fell disastrously several times and it caused terrible pain. One time, I fell near my bed and could not get up. I crawled to the phone and called my daughter to get help.” He said he avoided walking outdoors for fear that he would fall and end up lying on the ground with no help.

The initial phase at home was a critical phase for Eric because he experienced feelings of sadness about his aging and disability. The doctor at the hospital told Eric to prepare himself for a rehabilitation that extended over a long period, at least one year but probably much longer. During the first six months, Eric had recurring thoughts about living with a disability and being restricted to his home. He felt that he had been deprived of valuable time in old age. “How will I cope with this? I will be locked up in my apartment for the years I have left. I told the doctor at the hospital that years are in short supply at my age. And of course, no one imagined that it would be like this. I am on top of my life and I want to live my life to the fullest every day.” Eric perceived a gradual functional improvement, though his leg continued to feel weak. Approximately six months after the surgery, he could move indoors without support and walk shorter distances outdoors with a crutch or a walker. One year after the surgery, his leg was still weak and he often stumbled. In the second interview, Eric described his first six months at home as follows: “It was depressing. When I came home from the hospital, I could barely get from the bed to the bathroom without falling. I had almost given up, but it has improved beyond expectations.”

One year after the surgery, Eric’s physical health in general had decreased. In the third interview he described his situation in this way: “I have so little energy; I am so out of shape, I have a low fitness level. I cannot walk long distances like I did a few months ago.” As a result, Eric realized he needed to train regularly with an exercise bike at home. Eric followed-up with his doctor at the health care center and learned that his heart medication needed to be adjusted. Eric experienced an endpoint with no further progress in his ability to walk about two years after the surgery. Reflecting on the rehabilitation over time, in the last interview Eric said the following: “I know I will not get better. I will always need my cane or walker when I walk outside. This leg will never be fully restored; it is still weak”. The surgery was a long time ago now, but the first year was really hard.” He emphasized in the last interview that what was important in this stage of his life was the ability to live independently and perform daily activities at home without assistance. He explained that “To end up in a nursing home is my worst nightmare.” Eric said he had long since stopped being bitter about what happened during the operation, but he emphasized that it was sad that his disability and fear of falling hindered his ability to be active.
3.2 Being in charge

The category of “being in charge” relates to Eric’s tenacity, willpower to have control over his body, knowledge concerning his health, and information about health care offering that could facilitate his rehabilitation. Eric stressed the importance of taking personal responsibility for his rehabilitation. He said: “I have to invest in myself; there is no one else who can do it for me.” Despite his desire to be in charge, he had to be very patient in his daily life in the hope of improving his nerve function and ability to walk. In the first interview, he described how he struggled physically and mentally to adapt to a body in functional decline. Eric described his situation in this way: “I grew old over night.” In the last interview, he said that he was well aware that being 83 years old impacted his bodily resources. Continuously performing exercises and being active in daily chores at home was important for maintaining his mobility. “I enjoy working in the garden, so I reasoned with myself that I must try to kneel down without falling. If I fall, then I have to crawl on my knees until I find a tree to lean against and pull myself up.” In the first interview, Eric expressed his goal of driving a car again, which he was able to do seven months after the operation. But he still missed the longer trips he been able to take earlier. “Being able to drive gives one incredible freedom. But I can only drive short distances, because sitting with my impaired leg bent for a long time causes me pain.”

Eric wanted to be in control of his rehabilitation, which he maintained using strategies such as initiating communication with health care professionals involved in his rehabilitation. During his first months at home, Eric struggled because he lacked knowledge and information about the complexity of his hip replacement. He worried that a mistake had been made during his surgery and wondered whether doctors were withholding essential information. Eric was stressed because he did not know exactly what happened during the surgery and how it could explain the nerve impairment. He illustrated his memories from the operation with these words: “It felt like hammering and chiseling before they got the right prosthetic in place.” Several times, Eric tried to reach someone at the hospital who could give him a detailed explanation of what happened during the surgery. He had not understood the extent of his impairment immediately after the surgery based on the brief information he got from the doctor. Unfortunately, he was unsuccessful in his effort to communicate and gain knowledge. Therefore, he was dissatisfied that health care providers could not meet his informational needs. Hence, he took matters into his own hands and ordered his patient record from the hospital. Eric read the patient record and insisted on a meeting with the doctor at the hospital, who explained the sequence of events during the operation in detail. This made Erik much calmer. “This time the meeting with the doctor was positive. The doctor’s behavior towards me was totally different now. I felt I was listened to and I got answers to my questions.”

3.3 Having rehabilitative support

Eric was offered home help initially, but he firmly declined it. “I am supposed to do things myself in my own home.” Eric described the contact with the physiotherapist and occupational therapist in the municipality as most frequent during the first months he was home. Eric requested that the therapist’s home visits cease after three months because he was already familiar with his exercises based on the instructions he had received as an inpatient. He knew to contact the physiotherapist by telephone if he needed any support: “I just have to call and then I get the help I need.” Eric also indicated that he was very satisfied with the help he received from the orthopedic technician at the hospital. When he insisted on more comfortable and functional aids, they were arranged very quickly.

Throughout the study, Eric’s family members were a great support in his daily life. They also involved him in social activities, although he hesitated to take part in social events with too many people present. Fear of falling and being seen as disabled was always on his mind. Over time, he felt that it became monotonous to perform exercises on his own at home. Erik took the initiative and contacted the physiotherapist, who arranged for him to go to the gym at the health care center twice a week. Besides physical training, this gave Eric the opportunity to meet other people and talk about everyday events. He met other older people at the gym, which showed him that he was not the only one who suffered from physical limitations: “I am not the one who has it the worst.” Overall, Eric was satisfied with the support he received for his rehabilitation. For Eric, getting redress for his functional impairment was a part of his personal rehabilitation. With support
from a patient representative, Eric filed for compensation from the public health insurance plan, resulting in a sum that was paid to Eric for pain and suffering.

4 Discussion

This qualitative case study has provided insight about an older man’s rehabilitation over a period of five years. The findings reveal that one specific goal during the participant’s rehabilitation was the achievement of life space mobility. According to Baker et al. [37], life space mobility is viewed as the area a person moves through in daily life. The findings in our study showed that a shrinking life space, especially during the initial rehabilitation period at home, contributed to feelings of dependence. The findings show that difficulties walking were related to the participant’s impairment, which caused limited muscle strength and balance, and hindered activities. Pisters et al. [38] showed in a follow-up study over five years that avoidance of activity was one factor that predicted more future limitations in activities in patients with knee and hip osteoarthritis. According to the ICF [19], walking is an integral part of mobility and activities related to participation.

Our study also found that another specific factor during rehabilitation was the participant’s strong desire to train in order to continue living in his own home and in a well-known environment. Thus, rehabilitation should be designed to meet the needs of older people in their home environments. Our study indicated that the rehabilitation support received was satisfactory. The findings showed that family members were essential facilitators of social activities and that the professionals involved adopted an approach that contributed to self-care and to participation in planning the rehabilitation. Nonetheless, this study revealed the need for psychosocial support for the older person during the initial period at home. This is an area where nurses can contribute their knowledge to meet older people’s needs during rehabilitation. Burke & Doody [21] showed that nurses’ perceptions of their roles in the rehabilitation of older people identify a care delivery practice based on a holistic assessment of the older person’s need, collaboration in team, and support of the older person’s empowerment, with respect for the older person’s autonomy and integrity.

We can assume that part of the difficulty the participant experienced during his rehabilitation resulted from deficiencies in the availability of health care information. Dossa et al. [39] found that breakdowns in communication impacted the continuity of care and recovery following hospital discharge for patients with mobility impairments. One way to overcome this obstacle is by using nursing telephone support and counseling after surgery, according to Hørdam et al. [40].

The findings revealed that the participant’s hope that he would age well diminished when the surgery was unsuccessful. The findings also showed that he had to maintain his mood during rehabilitation when he had an unpredictable body that caused sudden falls. These findings are in line with the results of studies by Åkesdotter et al. [41, 42], which described an older person’s emotional reflections about life when improvements failed to appear after hip and knee replacement operations. The moment when the patients realized the surgery’s effects on their bodies was a critical phase. They had to motivate themselves to adjust to their own unfamiliar bodies, restricted movement, and use of support.

However, the findings in our study also indicated that factors such as a sense of control over one’s life, hope, optimism, a positive attitude, and strong motivation impacted the management of the rehabilitation process over the long term. These findings are supported in a study by Angel et al. [43]; its findings identify hope as an implicit mental effort to balance the uncertainty that one will return to a normal life after a spinal cord injury. The findings of our study illustrated that it was clear when the rehabilitation started, but it was not clear whether there was any end point. This has implications for those involved in designing and performing person-centered rehabilitation for older people. They must be open-minded to each individual’s specific needs and not see older people as a homogenous group with a specific diagnosis.

Overall, our findings showed how an individual’s inner strength contributed to his ability to effectively deal with an unexpected outcome of something that should have improved his ability to manage everyday life and facilitated graceful aging. Lundman et al. [44] emphasize that promoting inner strength is important when providing nursing care to older
people. The results of our study show that the participant’s rehabilitation experience was a time of contradictory emotions, characterized by bad days on which he felt trapped in the home and uncertain about bodily and functional improvement, and good days on which he was hopeful he would regain has ability to perform previous activities. The findings demonstrate that this older man’s rehabilitation was a long journey from a life of independence through a period of adjusting himself to limited mobility and ability to perform meaningful activities.

**Methodological considerations**

A case study is an inquiry strategy that enables a description of a contemporary phenomenon within its natural setting. Case studies are recommended when the borders between the studied phenomena and the context are not clear [32]. Choosing a case study approach allowed us to study the complex issue of rehabilitation as a whole. The chosen case may be a typical case, although an unusual case may help describe issues overlooked in a typical case. A single case study is suitable when the case represents something unique [32]. This means that the selection of a case is purposive, not representative [45]. From a previous study [34] of similar participants, one case was chosen because of this person’s unique reflexivity and facility for storytelling, as well as his need for long-term rehabilitation, which offered insights about home rehabilitation. The study only involved one case, which can be seen as a limitation. However, the data was rich and collected over a long time period, which allowed the experience of rehabilitation to become visible over time, which may compensate for this possible limitation. As is the case both in qualitative research and in case study research like this study, the findings are not interpreted in order to generalize. Rather, the unique case can offer insight about a phenomenon of interest, with the intention of capturing both the complexity of the unique circumstance as well as the more general one [45].

Our intention in this study was to describe experiences of home rehabilitation in everyday life over time. In spite of the fact that we can not generalize from this case study, which is not representative, we can learn from this case, and it is possible that the findings may be applicable in similar situations and contexts.

Credibility was established by using verbatim transcripts, comparing transcripts with the audio-taped interviews, discussing means of analysing data, and describing categories close to the text with quotations. One strength of this study was that the interviewer, a district nurse, was familiar with the issue being studied. This also meant that there was a minor risk that the authors’ extraction of data may have been informed by preconceived ideas. During the research process, the authors reflected together on their personal and professional opinions about the study topic. The fact that the study was based on one participant and one region specific to the Swedish context may be seen as a limit to the transferability of the findings, since particular socio-political contexts shape practice. Although the findings cannot be generalized, we believe they reveal knowledge that is transferable to similar contexts.

**5 Conclusion and implications**

One strength of this study is that we have studied an issue important for aging societies in general. The findings of this study have the potential to contribute to further knowledge and discussions about rehabilitation for older people. The findings reveal that living with a disability causes feelings of distress and despair. Our findings show that in order to support an individual’s ability to live a meaningful daily life through person-centered rehabilitation, professionals should focus both on personal factors affecting older people and on factors in the environment at home and in society in general. For implication in nursing, this study shows that nurses can contribute to development of psychosocial support for older people performing rehabilitation at home.

To enhance clinical practice, it is quite important to understand that rehabilitation that allows older people to maintain or improve their functional abilities can extend over a long period of time. This implies the necessity of communication among professionals at different levels in the healthcare system concerning older people’s rehabilitation needs. It would be interesting if further research looked at the development of the ICF as a documentation tool with respect to multidisciplinary teamwork and rehabilitation in outpatient settings for older people. There is a paucity of studies on district nurses’ and nursing assistive personnel’s contributions to rehabilitation for older people living at home. Therefore, it might be of
value to conduct studies exploring district nurses’ and home helpers’ perceptions of their roles in rehabilitation in order to further develop person-centered rehabilitation for older people.

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