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## **Abstract**

**Background and purpose:** There is limited knowledge about patients' and physiotherapists' conceptions of physiotherapy counselling in hip arthroplasty. The aim of this study was to describe physiotherapists' conceptions of the physiotherapy counselling needed by patients undergoing total hip arthroplasty.

**Methods:** The data for this qualitative study was collected using group (n=1) and individual (n=9) semi structured interviews. Totally seven physiotherapists were interviewed. The research data was analyzed by using a phenomenographic method.

**Results:** Three different categories of physiotherapy counselling at hip arthroplasty were produced and these categories formed a hierarchy. The narrowest descriptive category was Schematic physiotherapy comply with the protocol. Physiotherapy identifying patients needing individual rehabilitation was the second category, and the third was Coaching physiotherapy supporting rehabilitation at home, which was the widest category. The differences between the categories were described in four themes: 1. Moving, 2. Exercising 3. Interaction in relation to patient and 4. Health care system.

**Conclusion:** Education and counselling skills are part of a physiotherapist's core competencies. The categories and the variation of themes in our study can help the physiotherapist with self-evaluation of counselling in physiotherapy. These findings resulting from descriptive categories can be utilised in determining education tools in developing physiotherapy counselling.

## **Keywords**

Phenomenography, physiotherapist, hip arthroplasty

## INTRODUCTION

There is limited knowledge about patients' and physiotherapists' perceptions of patient education in physiotherapy in hip arthroplasty. To support patients' rehabilitation process through patient education in physiotherapy and to develop physiotherapists' education, there is a need to be aware of these perceptions. Education and movement are essential factors in physiotherapy. According to the World Confederation of Physical Therapy WCPT, physiotherapy aims to develop, maintain and restore maximum movement and functional ability throughout the lifespan. It involves the interaction between the physiotherapist and patients/clients and their families, care givers and other health professionals and communities. This interaction is a process where movement potential is assessed, goals are set by working together and by using knowledge and skills special to physiotherapists (World Confederation of Physical Therapy 2015).

The purpose of total hip arthroplasty, THA, is to relieve pain and to facilitate moving (Tsukagoshi et al., 2012), hence to improve functional ability and quality of life (Di Monaco, Vallero, Tappero and Cavanna 2009). However, some patients do not recover as expected, and pain and functional limitations may persist (Bertocci et al., 2004; Frost et al., 2006 Lungu, Maftoon, Vendittoli and Desmeules 2016). According to patients' experiences, patients were disappointed at the length of recovery time after THA, they felt disabled and had difficulties performing some daily activities (McHugh and Luker 2012).

Joint arthroplasty clinical pathways recommend preadmission education (Van Herck et al 2010). Many professionals such as surgeons, nursing staff and physiotherapists guide patients to manage with the physical changes after surgery (Grant, St John and Patterson 2009). The physiotherapist is a key professional in the caring team for patients undergoing THA (Minns Lowe, Barker, Dewey and Sackley 2009). The immediate postoperative rehabilitation goal is to achieve a sufficient level of moving and independence in daily activities with the help of early physiotherapy (Jones, Beaupre, Johnston and Suarez-Almazor 2007). Early intensive mobilization and rehabilitation can speed up recovery

(Khan et al. 2009; Larsen et al 2009). The enhanced recovery program after THA (Maempel, Clement, Ballantyne and Dunstan 2016) and physiotherapy starting on the operation day (Juliano et al 2011) shorten the length of hospital stay.

Studies of physiotherapy practices have found that stepping exercises may facilitate muscular recovery after the operation (Tsukagoshi et al., 2012). However, bed exercises do not add value to recovery nor shorten the length of stay in hospital (Jesudason and Stiller, 2002). Home exercises should be intensive and specific, including muscle strength exercises and walking exercises (Jan et al 2004). Physiotherapist-guided training of walking skill had positive effects on walking distance and stair climbing that persisted one year after surgery (Heiberg, Bruun-Olsen, Ekeland and Mengshoel 2012). Early maximal strength training, starting one week postoperatively, promotes regaining muscular strength (Husby et al. 2009). The exercising can be centre-based with supervision or home-based without supervision (Galea et al 2008). Nevertheless, some patients need supervision to perform intensified exercises (Mikkelsen, Mikkelsen and Christensen 2012). So there are a need for (Minns Lowe, Davies, Sackley and Barker 2015) long term, high quality follow up studies to find sufficient evidence of the effectiveness of post discharge physiotherapy (Mikkelsen, Mikkelsen and Christensen 2012).

Even if the evidence is limited about postoperative physiotherapy after discharge, the need for physiotherapy and physiotherapist advices in the hospital is recognized. There are many terms related to patient education in hospitals: patient education, health education, patient counselling, and health counselling, for example (Poskiparta, Kettunen and Liimatainen 2000). In this article, we use the term patient education in physiotherapy. Patient education is a part of physiotherapy practice (Frerichs, Kaltenbacher, van de Leur and Dean 2012) aiming to offer professional knowledge and helping the patient to apply information in everyday life (Trede 2000; Falvo 2011). According to previous studies, patients undergoing THA valued physiotherapist education for gaining knowledge about rehabilitation, functional recovery, beneficial physical activity,

written exercise advice, movement precautions and the opportunity to learn skills relevant to post-operative recovery (Heine, Koch and Goldien, 2004; Johansson, Hupli and Salanterä, 2002; Soever et al., 2010; Jäppinen, Hämäläinen, Kettunen and Piirainen 2017; Shuldham 1999).

Physiotherapists have difficulties differentiating patient education from interventions (Rindflesch 2009) and there is a lack of studies on patient education in physiotherapy from the physiotherapist's perspective. The aim of this study is to describe physiotherapists' conceptions of patient education in physiotherapy needed by patients undergoing total hip arthroplasty. Awareness of physiotherapists' perspectives on patient education in physiotherapy can be used in developing patient education to facilitate the rehabilitation process, in developing physiotherapy students' education and physiotherapists' education at workplaces.

## METHODS

### Design and participants

This study is a part of a wider research project, which explored ten patients' views before the THA operation, at hospital after the operation and at home during convalescence (Jäppinen, Hämäläinen, Kettunen and Piirainen 2015). The participants in this sub-study were physiotherapists working with patients undergoing total hip arthroplasty at the hospital where the research took place. They were volunteers, free to withdraw from the study at any point and provided written consent for being interviewed and for the use of the data in publications.

### Data collection

The data for this qualitative study was collected during spring 2010 in collaboration with higher education students. The first and the last author were responsible for the study design, research process, and guided interviews.

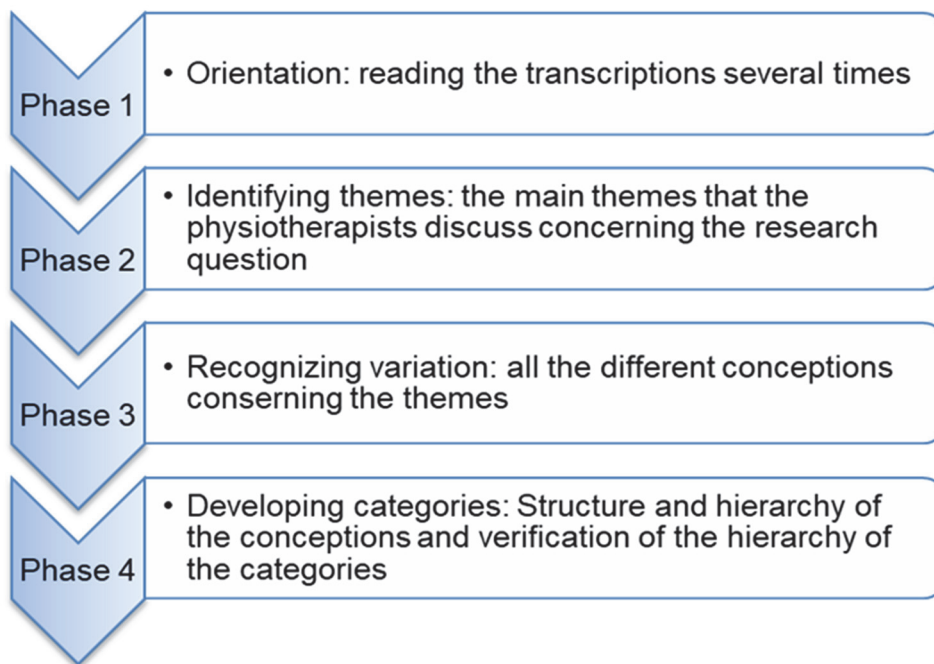
The data was collected in two stages: in a group interview (6 physiotherapists), and in individual semi-structured interviews (9 interviews and 5 different physiotherapists) after physiotherapy counselling on the 3<sup>rd</sup> postoperative day. The individual interviews were conducted with physiotherapists, who worked with those ten patients followed throughout this wider research study, and the same physiotherapist could be interviewed multiple times. The group interview was open to physiotherapists who were on site and worked with patients undergoing hip arthroplasty. All the physiotherapist were volunteers and they had the right to participate in individual or group interview or both.

The interviews explored physiotherapists' views on physiotherapy and patient education in physiotherapy with regard to hip arthroplasty; contents, forms and aims in physiotherapy and patient education, self-evaluation of a physiotherapy session, interaction between patient, physiotherapists' experiences concerning patients' ability to go home and manage there. The interviews were audio recorded and transcribed verbatim. The data consisted of 48 A4 pages of transcriptions (font=Times New Roman 12, spacing =1.5).

### Data analysis

The research data was analysed by using a phenomenographic method (Åkerlind, 2005a), which has been developed in the field of pedagogical research (Marton, 1986). The focus is on the variation in conceptions (Marton and Booth, 1997) and it offers the possibility of identifying differences and the hierarchical structure of the conceptions (Åkerlind, 2005a; Åkerlind, 2008). At the beginning of the analysis our focus was on identifying physiotherapists' views of patient education in physiotherapy in hip arthroplasty. Then we identified differences and similarities in order to form descriptive categories which were organised hierarchically and inclusively. We collaboratively considered the consistency between the original data and our findings during the analysis process. Our aim was to confirm the results and to minimise the influence of our own viewpoints (Åkerlind, 2005a). The data analysis process is presented in Figure 1. The first

author performed phases one and two and phases three and four were performed collaboratively in the research team.



**Figure 1**  
Process of phenomenographic data analysis

### Ethical issues

Ethical approval for the study was obtained from the Ethical Committee (Dnumber 323/13/03/02/2009) and the Department of Surgery also approved this study. All the physiotherapists were informed about the aims of the study orally, and they provided written consent for interviews and for the use of the data in publications.

## RESULTS

A total of 7 physiotherapists (six female and one male) took part in this study. Their mean age was 44 years and their mean work experience as a physiotherapist was 17 years.

### Categories and themes

The categories of patient education in physiotherapy were seen in the variation of themes that the physiotherapists expressed in the interviews. These themes

were: 1. Moving, 2. Exercising 3. Interaction in relation to patient and 4. Health care system

In the “Moving” theme, the physiotherapists expressed their perceptions on evaluating patients’ locomotion and range of motion before and after operation and on providing guidance in them, permissions and restrictions concerning operation and movement and information about assistive devices. This theme also included how physiotherapists teach patients to manage in daily life; for example, getting out of bed, sitting, standing up, walking with crutches and on stairs. The “Exercising” theme indicated the physiotherapists’ views on how patients should exercise before and after operation, during the hospital stay and at home, guidance for doing it correctly and information and encouragement to start physical activity after operation, for example swimming or gym. In the “Interaction in relation to patient” theme, the physiotherapists described their relationships to their patients, how patients are individuals and their own persons and how to interact and create trust during the short stay in hospital. In the theme “Health care system” physiotherapists expressed their views about the short hospital stay and rapid discharge and how this shortens time for patient education. The quotations cited are from the physiotherapists’ (PT 1 - PT 7) individual interview (I) or group (G) interview.

Three different categories of patient education in physiotherapy in hip arthroplasty were produced. These categories were constructed hierarchically. The narrowest was Schematic physiotherapy complying with the protocol. Identifying individual rehabilitation needs was the second category, and the third was Coaching home rehabilitation, which was the widest category containing other two categories (Table 1).



**Table 1**

Physiotherapists' conceptions of patient education in physiotherapy in hip arthroplasty

<b>Variation of themes</b>	<b>Hierarchy of categories</b>  <b>I</b>  <b>Schematic physiotherapy complying with the protocol</b>	<b>II</b>  <b>Identifying individual rehabilitation needs</b>	<b>III</b>  <b>Coaching home rehabilitation</b>
<b>Moving</b>	A certain pattern in guiding movement	The patient's condition in determining progress'	Encouraging patient in self-motivated moving
<b>Exercising</b>	Written exercise instructions made collectively	Suitable exercises based on individual evaluation	Exercise advice based on discussion with the patient
<b>Interaction in relation to patient</b>	Natural relationship	Responsive relationship	Physiotherapist as a key person in preparing patient for the future
<b>Health care system</b>	Awareness of patient managing at home	Identifying the rehabilitation need	Concern about patient's managing at home and vision of an ideal situation supporting patient's coping

Description of the categories*Category I: Schematic physiotherapy complying with the protocol*

The focus of this category was on the protocol physiotherapists followed in order to ensure rapid discharge directed by professional team work in the health care

organization. In this category, the moving was shown as a certain pattern in which patients were instructed. This pattern included the same content and main guiding principles and it has been created over the years in collaboration with physiotherapists based on their daily experiences concerning THA patients. However, the schedule order and personal way of patient education varied among physiotherapists, but the aim was the same for every patient: the patient can move and walk safely, manage independently and knows his/her restrictions and home exercises.

‘It is a certain protocol that we have in a sense developed and created for that specific patient group over time.’ (PT1, I)

The exercising theme in this category could be described as written exercise instructions made collectively by physiotherapists. The physiotherapists talked about the contents of the instructions and that the instructions are based on their experience and the exercises target functionality and activation of muscles.

‘Exercises should be as functional as possible. The aim is that the joint works as well as possible in everyday life.’ (PT1, G)

In the “Interaction in relation to patient” theme, the focus was on the natural relationship between the patient and the physiotherapist. The physiotherapists mentioned that cooperation is easy with these patients because they are usually motivated. It was rewarding for physiotherapists because patients recovered fast, understood easily and they were thankful for getting guidance.

‘Interaction is very rewarding in my view. I can see great progress in the patient in a few days.’ (PT3, G)

In the fourth theme, “Health care system”, physiotherapists discussed the system where every patient has the same goal; early discharge on a certain postoperative day and their awareness that patients mainly manage well at home after operation.

‘So, all the patient education and everything else has to be done in a shortened time to make a compact package. And the aim is still the same as it has been earlier; so, that they manage independently and safety at home. (PT2, G)

### *Category II: Identifying individual rehabilitation needs*

The focus of this category was on the individual differences in patients and how these affected patient education in physiotherapy, i.e. what things the physiotherapist should take into consideration and how to customize education. The theme “Moving” contained physiotherapists’ views on how to estimate the patient’s condition and, according to that, guide moving. Physiotherapists discussed taking into account the patient’s earlier performance and activity, age, other illnesses, individual aids and home conditions. The physiotherapist’s experience in evaluating these things was also mentioned.

‘We take notice of the patient’s individual situation; so, what is the home situation, does the patient have other illnesses which can affect managing at home. Is the patient altogether able to go home or does he/she need follow-up care in some other hospital? Or does the patient need some special aids other than what is routine.’ (PT6, G)

In the “Exercising” theme, an exercise programme, from which individual exercises were picked, was essential. The physiotherapists talked about how exercises are focused according to the patient’s postoperative condition, earlier physical activity and the type of exercises. The patient’s earlier operation experiences and experiences of friends and relatives could also affect guiding. The patient’s right to refuse exercising was mentioned.

'...and how quickly the patient can start physical training again. The exercise guiding is totally different for an active sporting patient than a patient needing basic mobility' (PT2, G)

In the "Interaction in relation to patient" theme physiotherapists talked about how they accommodate their interaction and guiding while being sensitive to the patient's cues and condition. Some patients needed encouragement and some restraint, and different patients enrich the work.

'The patient had undergone big surgery and the physiotherapist should be "awake". The physiotherapist should observe the patient's general condition and wellbeing and not demand too much. This patient in this case is the kind that is moving and exercising at the limits of his/her resources.' (PT4, I)

In the fourth theme, "Health care system", physiotherapists discussed identifying patients for whom they booked a follow-up check by the physiotherapist. The physiotherapist mentioned that it is not possible for every patient.

'And I booked a follow-up outpatient physiotherapy check six weeks after the operation. So, she/he comes for the appointment and I hope that she/he has got rid of the crutches during that time or at least at that appointment' (PT6, G)

### *Category III: Coaching home rehabilitation*

In the third, wider category "Coaching home rehabilitation", the focus was on coaching and stimulating the patient to be prepared for and capable of self-motivated and long rehabilitation. This was considered in guiding moving, exercising and in relationships.

The theme "Moving" contained physiotherapists' views on how they orally motivated patients to move and practise. Patients had the possibility to phone the physiotherapist, if they had questions concerning the physiotherapist's working

area, for example moving and permissions and restrictions. Patients were reminded to talk with the doctor at the follow-up check about the possible difference in lower limb lengths or the need for rehabilitation.

'It is not impossible that there are matters the patient thinks about; what they can do and what about other activity. I am certain that something remains unclear. On the other hand, they have the number to phone and ask, if there is something on their mind' (PT5, I)

The "Exercising" theme in this category could be described as the physiotherapist, through discussion with the patient, advising exercise and physical training and this discussion was motivational. Physically inactive patients were encouraged to exercise and be active.

'We talked a lot about her/his further rehabilitation and exercising, when she/he can start to train at the gym and go swimming' (PT1, I)

In the "Interaction in relation to patient" theme physiotherapists talked about patients' trust in their physiotherapist and that patients valued the time the physiotherapist can offer them. Physiotherapists also expressed a positive attitude towards later phone contacts so that patients could get advice during their own rehabilitation process at home.

'Many patients were surprised that they got so much guiding and the physiotherapist came to be some kind of trusted professional since the pre-operative visit.' (PT2, G)

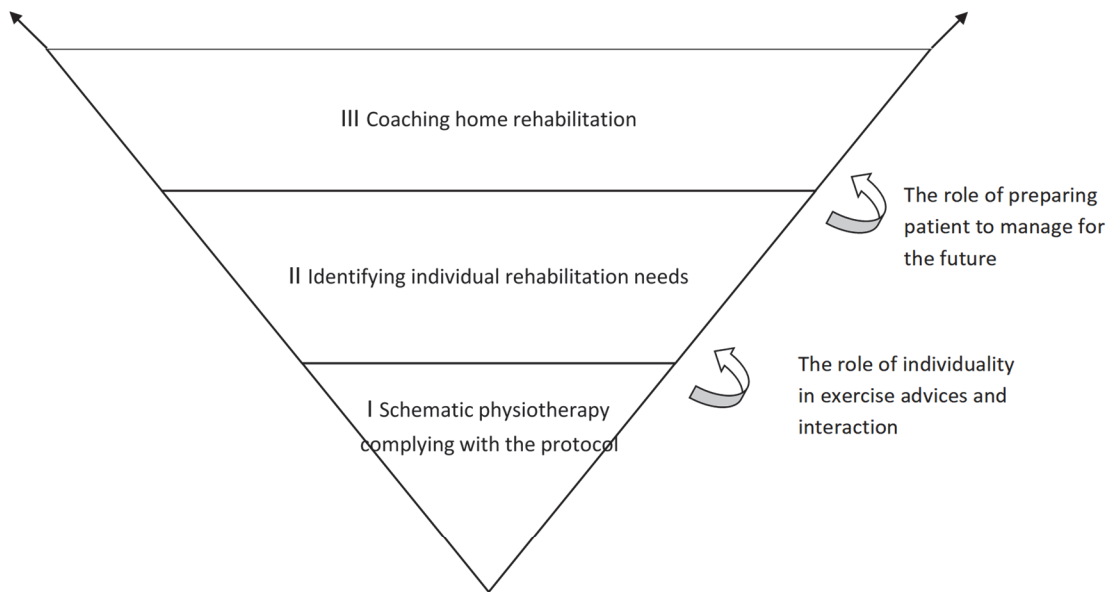
In the fourth theme, "Health care system", physiotherapists discussed what defects could follow from this rapid discharge and how these defects could be avoided from physiotherapists' perspective. Physiotherapists highlighted their concern about some patients managing at home and their vision of an ideal

situation supporting the patient's coping. Physiotherapists mentioned home visits before discharge to ensure patients could manage at home and be able to exercise outdoors. A few more days at the hospital could allow time for practising and strengthening patients' knowledge and ability to move and manage activities in daily life. Follow-up controls, early exercise instruction before operation, use of the internet and reliable web pages to get information, and training in the water after the operation were mentioned. The lack of physiotherapy resources and the increased number of patients prevented this ideal model being realized.

'the timetable is too tight for some patients. A few more days in the hospital or at least one day could be useful for them' (PT 3, G)

## DISCUSSION

The results showed that patient education in physiotherapy in hip arthroplasty was constructed hierarchically, starting from schematic physiotherapy complying with the protocol and continuing to coaching for home rehabilitation. The key aspects were found in the varying themes. They constructed the critical aspects between the descriptive categories (Åkerlind, 2005b). Two critical aspects in patient education in physiotherapy could be identified (Figure 2). The first critical aspect was how schematic physiotherapy (Category I) could shift towards patient education in physiotherapy identifying individual rehabilitation needs (Category II). The key issue was to increase individuality in exercise advices and interaction. The second critical aspect was in widening the perspective from identifying individual rehabilitation needs (Category II) to coaching home rehabilitation (Category III). Thus, the point in the patient education was to prepare the patient to manage for the future, and a vision of an ideal situation supporting the patient's coping at home. In the future, patient education could be easier in this aspect when there is the possibility to guide using tele technology. Tele technology can also shorten the length of stay in hospital with no changes in re-admission and complications (Vesterby et al 2017).



**Figure 2**  
Physiotherapists' conceptions of patient education in physiotherapy in hip arthroplasty and the critical aspects between the categories.

Schematic physiotherapy complying with the protocol was identified in physiotherapists' discussion. The perception of an increasing amount of operations, shortened time for patient education and demand for enhancing the work made us wonder how a physiotherapist can carry out individual patient education. The focus in physiotherapy is to guide functional training and there is limited time for analysing and guiding specific movement due to the shortened length of stay in hospital (Louw, Diener, Butler and Puentedura 2013; Şendir, Büyükyılmaz and Muşovi 2013). Nevertheless, the patient education should meet the patient's need for learning and ensure that the patient has enough knowledge and skills to go home (Montin et al 2010). It is important to identify the patient's individual goals (Brander and Stulberg 2006, Grant, St John and Patterson 2009), so that the physiotherapist could guide the patient in managing at home.

The patient education in physiotherapy in this first category could be seen partly as professional- or organization-centred rather than patient-centred. Our results are in line with those in the study of Mudge, Stretton and Kayes (2014), in which they found that physiotherapists' clinical practice was dominated by the

biomedical aspect, which limited adoption of patient-centred working. Physiotherapists' way of working focused on their own perspective as experts (Mudge, Stretton and Kayes 2014). Also in our study physiotherapists highlighted moving and exercising, which could be considered as a biomedical aspect. Physiotherapists cited their experience as the basis of making instructions. Evidence-based practice was not mentioned as the basis of instructions and only one physiotherapist raised this perspective in the discussion. This surprised us, but a recent review stated that physiotherapists use their peers and social contacts as a source of information rather than the literature (Condon, McGrane, Mockler and Stokes 2016).

Our findings emphasized the importance of recognizing patients' rehabilitation needs. Previously it has been indicated that patient and family education, interdisciplinary communication and collaboration, standardized protocol and staff roles are important elements of the THA clinical care pathway (Van Citters et al 2014). According to our findings physiotherapists pointed out the protocol, which was clear to all professionals. Rapid recovery models aim at fast discharge (Stambough et al 2015) and there is limited time for the physiotherapist to assess which patient is going to need supervision after the hospital stay. This made us wonder what kind of evaluation methods and knowledge physiotherapists need to have in order to recognize patients' rehabilitation needs. Identifying the patient's specific needs is connected to the patient-centred approach valued by patients (Cott 2004) and there are patients who need supervision to perform intensified exercises (Mikkelsen, Mikkelsen and Christensen 2012) to achieve optimal recovery.

It is important to prepare patients to manage at home and increase exercise adherence. Motivational strategies could improve adherence, but the physiotherapist should be aware that non-adherence is multi-dimensional and there are many other strategies which can also help to optimise adherence (McLean et al 2010). Self-efficacy is thought to be related to exercise adherence and it is influenced by intrinsic and extrinsic factors. Extrinsic factors include, for example, verbal encouragement, physiological cues and cues to action (Rawlett



2014), which were also recognized in physiotherapists' perceptions in our study. Physiotherapists also raised patients' possibility to contact the hospital and physiotherapist after discharge, which is also an important aspect from the patients' viewpoint (Cott 2004).

Interaction was one central theme and was described, among other things, as natural and easy, adaptable and a basis of trust. Interaction is related to patients' satisfaction with physiotherapy (Oliveira et al 2012) and a part of patient-centeredness (Kidd, Bond and Bell 2011). This somehow contradicts the previous point about an organization-centred approach, elements of which we also discovered. Patient-centred communication can be defined as multidimensionally related to many theoretical views, also connected to the patient's communication skills (Ishikawa, Hashimoto and Kiuchi 2013). The physiotherapist's ability to provide good education is part of the good patient-therapist interaction valued by patients (O'Keeffe et al 2016). Good education from patients' views included for example clear information about their problems, treatment plan, home exercises in the form of explanation and metaphors (O'Keeffe et al 2016). Education skills are part of a physiotherapist's core competencies (World Confederation of Physical Therapy 2015; European commission, European Qualification Framework 2009). Improving physiotherapists' communication skills can result in better patient-centred physiotherapy (Cooper, Smith and Hancock 2008). The categories and the variation of themes in our study can help the physiotherapist with self-evaluation of patient education in physiotherapy. These findings resulting from descriptive categories can be utilised in determining content and methods of physiotherapists' education developing patient education in physiotherapy.

### Limitations and strengths

The strength of this qualitative study is that it explored patient education in physiotherapy from physiotherapists' viewpoint, which has been little studied. This research study brings in-depth knowledge about patient education in physiotherapy from physiotherapists' perspective. This study has its limitations.

The findings are related to the regional and national context of the Finnish healthcare system. The number of physiotherapists was small even though they were interviewed both in a group and individually.

### Conclusion

The objective of this study was to produce useful insights regarding patient education in physiotherapy needed by patients undergoing total hip arthroplasty from physiotherapists' viewpoint. The results showed that patient education in physiotherapy in hip arthroplasty was constructed hierarchically, starting from schematic physiotherapy complying with the protocol and continuing to coaching home rehabilitation. According to our results, two critical aspects can be identified: 1. How schematic physiotherapy could shift towards patient education in physiotherapy identifying individual rehabilitation needs, and 2. Widening the perspective from identifying individual rehabilitation needs to coaching home rehabilitation.

These findings can be used as a basis for planning development in patient education in physiotherapy to facilitate the rehabilitation process, in developing physiotherapy students' education and physiotherapists' education at workplaces.

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### Declaration of Interest

The authors report no conflicts of interest

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