Understanding exercise promotion in rheumatic diseases: A qualitative study among physical therapists

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ABSTRACT

Background: Physical therapists have unique expertise in planning, prescribing, and supporting exercise for patients with rheumatic diseases. Promoting exercise can be a challenge, but descriptions of physical therapists’ experiences within the field of rheumatology are limited.

Objective: The purpose of this study was to explore and describe ways of understanding exercise promotion among physical therapists working in rheumatology.

Design and Method: A phenomenographic approach was used to analyze semi-structured interviews with 25 physical therapists working primarily within the field of rheumatology from eight different physical therapy departments at hospitals across Sweden.

Results: Four ways of understanding exercise promotion were identified. These were named: exercise promotion as information and monitoring of the behavior, as facilitation of skills building, as co-creation of awareness, and as the development of independence and self-reflection.

Conclusion: Physical therapists in rheumatology understand exercise promotion in various ways that differ with respect to comprehensiveness and patient-centeredness. The physical therapists’ use of behavior change techniques serves different purposes in exercise promotion, varying from external control to self-management. The present results might thus be used to develop awareness, knowledge, and skills for more deliberate exercise promotion among physical therapists working with patients having rheumatic diseases.

Introduction

Adults with chronic health conditions should engage in regular physical activity to promote and maintain health and to reduce the risk of comorbidity and premature death (Powell et al., 2018). However, physical fitness, such as increased cardiorespiratory fitness and increased muscular strength and endurance as well as body composition, flexibility, and neuromotor fitness, develops over months or years of intentional and regular exercise (Garber et al., 2011). This structured, planned and repetitive subset of physical activity (Caspersen, Powell, and Christenson, 1985), including behavior support for its adoption (van Den Berg et al., 2007) and maintenance (Swardh, Biguet, and Opava, 2008), has been a significant component of physical therapy treatment for patients with rheumatic diseases for more than two decades (Hurkmans, Jones, Li, and Vliet Vlieland, 2011a; Vliet Vlieland and Pattison, 2009). Physical therapists have specific knowledge and skills to tailor exercise interventions for patients with chronic conditions (Verhagen and Engbers, 2009), and the tailoring includes prescription of the appropriate type, intensity and volume (Garber et al., 2011; Piercy et al., 2018). Although a majority of physical therapists give advice on regular physical activity, including exercise, 72% of Dutch physical therapists specializing in rheumatic conditions express a need for further education on its promotion (Hurkmans et al., 2011b). This might also apply to physical therapists in other countries.

Adherence to prescribed exercise is a significant component for achieving positive outcomes (Rhodes and Fiala, 2009). While physical therapists have a long tradition of exercise prescription (Dean, 2009a), the profession needs to evolve in accordance with scientific evidence and changes in health care delivery (Dean, 2009b). Furthermore, the specific intervention characteristics and strategies that successfully promote long-term physical activity behavior including exercise resulting in optimal outcome still need to be determined (Conn, Hafsdahl, ...
Minor, and Nielsen, 2008) in order to make the best decisions about evidence-based individual exercise prescription (Jones et al., 2006a, 2006b). Different behavior change theories and techniques (Michie et al., 2013) have been used to promote regular physical activity, including exercise, in studies involving individuals with rheumatoid arthritis (Demmelmaier and Iversen, 2018). However, methodological heterogeneity hampers a full understanding of which specific techniques or combinations of techniques result in maintained behaviors (Larkin et al., 2015a).

Qualitative studies exploring patient perspectives on: attitudes (Eurenius, Biguet, and Stenström, 2003); beliefs and expectations (Larkin, Kennedy, Fraser, and Gallagher, 2017); engagement (Withall et al., 2016); facilitators and barriers (Baxter et al., 2015; Petursdottir, Arnadottir, and Halldorsdottir, 2010); intensity (Brodin, Swardh, Biguet, and Opava, 2009); and benefits and effects (Law et al., 2010; Wilcox et al., 2006) and maintenance (Loeppenthin et al., 2014; Swardh, Biguet, and Opava, 2008) regarding physical activity, including exercise, have informed physical therapists’ clinical reasoning related to exercise promotion. Explorative studies on physical therapists’ experiences and clinical reasoning related to exercise promotion might also be important in order to facilitate reflection and to provide new ideas, thus expanding the range of support strategies. Such aspects have been explored among physical therapists in a range of specialty areas (Jensen, Gwyer, and Shepard, 2000), but less so within rheumatology. The aim of the present study was therefore to explore and describe ways of understanding exercise promotion among physical therapists working with patients having rheumatic diseases.

Method

Theoretical framework

Phenomenography (Marton, 1981) was chosen as the qualitative research approach for the present study in order to describe how physical therapists understand exercise promotion. This research orientation should not be confused with phenomenology despite their common aims to describe human experiences. Phenomenography describes the variations in experiences of phenomena (second-order perspective) in order to identify collective meaning (Barnard, McCosker, and Gerber, 1999; Marton, 1981; Svensson, 1997), while phenomenology describes the essence of a phenomenon “as it is” (first-order perspective) (Giorgi, 1999). Phenomenography was developed within educational research in the 1970s, but its applicability in health care research has grown since then (Sjostrom and Dahgren, 2002) and it can thus be considered an appropriate method for identifying aspects related to the physical therapist’s educational role in exercise promotion. There is an accepted variation in methodological approaches to phenomenographic research, in particular regarding the amount of each transcript that is considered, the emphasis on collaboration, and the ways of managing the data and the constituting structure (Åkerlind, 2012).

Central to the phenomenographic approach are the descriptions of the differences and similarities in understanding a phenomenon (Svensson, 1997). Categories of descriptions are used to characterize the different ways of understanding a phenomenon and to reach a summary expression that is as close to the data as possible. An understanding is generally accessed through language and is fundamental to the way individuals act, form beliefs, and experience phenomena (Barnard, McCosker, and Gerber, 1999). Each category of descriptions is hierarchically, horizontally, or vertically interrelated in an outcome space, and this constitutes the result of phenomenographic research (Åkerlind, 2012).

Participants

In the search for variation in physical therapists’ understanding of exercise promotion for patients with rheumatic diseases, a purposive sampling method was used, and the participants were chosen for maximum variation in background, demographics, and context that might

Table 1. Characteristics of the participants (n = 25).

| Characteristic                                      | N     |
|----------------------------------------------------|-------|
| Gender, female/male, n                             | 24/1  |
| Age, years, md, (range)                            | 44 (28–66) |
| Level of care, n                                   |       |
| University Hospital                                | 8     |
| Regional hospital                                  | 15    |
| Local hospital                                     | 1     |
| Experience as a physical therapist, years, md, (range) | 15 (1–45) |
| Experience within rheumatology, years, md, (range) | 9 (1.5–30) |
| Previous or present work as an exercise coach, (e.g. sport associations), yes/no, n | 13/12 |
| PT’s own exercise behavior past month, (>30 minutes of moderate intensity), n per week: |       |
| 0                                                  | 1     |
| 1–2                                                | 12    |
| 3–4                                                | 11    |
| 5–7                                                | 1     |
influence their understanding of exercise promotion (Table 1). Eight different physical therapy departments at university hospitals, regional hospitals, and local hospitals in various cities of Sweden were invited by the researchers to take part in the study. The head of the departments received and forwarded the invitation to participate to Swedish-speaking physical therapists working primarily within the field of rheumatology. The participant sampling and data collection through interviews continued until no new aspects of the phenomenon under study emerged. Saturation seemed to be achieved with the inclusion of 25 physical therapists. The different workplaces represented both inpatient and outpatient clinics, and the physical therapists treated mostly adult patients with different inflammatory and systemic rheumatic diseases such as rheumatoid arthritis, ankylosing spondylitis, myositis, systemic lupus erythematosus, and scleroderma.

**Data collection**

In order to operationalize the research phenomenon and to develop appropriate domains of content for the interview guide (Table 2), consultations were held with experienced physical therapists within the field of rheumatology and a literature review was performed. None of the physical therapists involved in the consultations participated in subsequent individual interviews. The themes in the interview guide were then pre-established prior to data collection. In the interviews, the physical therapists were encouraged to talk about experiences from their own clinical work related to all pre-established themes. Follow-up questions were adjusted to individual responses and varied slightly with each participant. Probing questions such as "Could you say something more about that?", "Can you give a more detailed description?", and "Do you have further examples of this?" were used during the interviews. The individual interviews were performed by the principal author (ES), an experienced physical therapist within rheumatology with knowledge in behavioral medicine and physical activity, including exercise as well as within qualitative research approaches, in secluded rooms at the physical therapists’ workplaces. Interviews lasted 39–87 minutes (mean 62 min) and were recorded and transcribed verbatim by the first author (ES). Ethics approval was obtained from the Regional Ethical Review Board in Stockholm, and all participants gave written informed consent before participating.

**Table 2. Interview guide with opening question and themes.**

| Opening question: “Please describe a situation or a case you have experienced that you think has taught you something important about exercise promotion.” |
|---|
| Patient cases that have been a success versus a failure for the physical therapist |
| Adoption versus maintenance of exercise |
| Social support |
| Goal-setting |
| The patient’s previous exercise experiences |
| The environment and context |
| The team (nurse, occupational therapist, physical therapist, rheumatologist, social worker) |
| Follow-ups |
| The planning |
| The conversation |
| The role of the physical therapist |
| The most important focus in the physical therapist’s work |

**Table 3. The steps in the data analysis.**

- All of the transcribed interviews were read carefully by the principal author (ES) to become familiar with and to get an overview of the material.
- Each interview was analyzed separately by the principal author (ES). Aspects describing what in each participant’s focus in relation to exercise promotion were found in all 25 interviews and were marked in the transcripts. Through the identification of how each participant described the meaning of his/her focus, the characteristics of each participant could be described as his/her predominant way of understanding exercise promotion. One author (IL) re-analyzed six of the 25 interviews. The outcome was then discussed between the two authors.
- All agreed ways of understanding were compared for similarities and differences within and across all the interviews by the principal author (ES).
- Based on these similarities and differences in participants’ predominant ways of understanding exercise promotion, a preliminary pattern of categories of description was then constructed by the principal author (ES) and discussed with IL.
- The two authors (ES, IL) discussed and compared the emerging pattern of categories of description with the content of the original interviews several times until negotiated consensus was reached.
- Discussions with another two authors (CO, LN) were held continuously during the latter steps of the analysis.
- An interpretation of the range of collective understanding and the structure of the hierarchical internal relation between the categories of description (i.e. the outcome space) was made in collaboration between all four authors (ES, IL, CO, LN).
- Individual participant quotes were provided for illustration and trustworthiness.

**Data analysis**

A phenomenographic approach to the data analysis of the individual interviews was used and was inspired by the method proposed by Larsson, Holmström, Lindberg, and Rosenqvist (2004) and Larsson and Holmström (2007) (Table 3). In addition to the principal author conducting the interviews, the research team contributing to the analysis consisted of an experienced physical therapist and physical therapy teacher with knowledge in qualitative research approaches (IL), a physical therapist with expert knowledge in physical activity, including exercise in rheumatic diseases (CHO), and an occupational therapist with expertise in qualitative research methods (LN).

**Findings**

Four qualitatively different ways of understanding exercise promotion were identified among the physical therapists: (A) Exercise promotion is understood as information and
monitoring of the behavior, (B) Exercise promotion is understood as facilitation of skills building, (C) Exercise promotion is understood as co-creation of awareness, and (D) Exercise promotion is understood as the development of independence and self-reflection. The understandings were interpreted in the outcome space (Figure 1) as hierarchically organized, with each physical therapist having one predominant way of understanding exercise promotion. The category (D) Exercise promotion is understood as the development of independence and self-reflection was thus understood as the most comprehensive one, with the ability to also understand exercise promotion as in the other categories depending on the context and the patient. All physical therapists equally labeled themselves as coaches, counselors, advisers, motivators, and/or guides with a unique expertise regarding regular physical activity, everyday physical activity and exercise in rheumatic diseases. The four descriptive categories are illustrated by translated quotations from the interviews.

**Exercise promotion is understood as information and monitoring of the behavior**

In this category, the physical therapist often takes on a superior professional position toward the patient. The patient is seen as an individual who needs to be controlled and externally guided. By providing facts and information to the patient regarding exercise and its benefits for both health and the rheumatic disease, the physical therapist hopes to get the patient to start exercising. Having the patient approach exercise at the clinic and show up for treatments is essential. The physical therapist designs a specific exercise program based upon the patient’s physical limitations, and this program then plays a key role in the structure of the exercise promotion. The patient performs the program under supervision and support, and any exercise that feels uncomfortable or too strenuous is replaced or eliminated. The physical therapist frequently gives practical instructions and adjusts weights, and sometimes suggestions are given for other suitable activities outside the clinic. Exercise diaries are used in order to give the physical therapist an overview of the quality and frequency of the patient’s exercise and to check if they are providing truthful data. The patient uses the diary to keep track of what he/she has committed to do, and it is then used at follow-ups to apply pressure on the patient who seeks to please the physical therapist. The physical therapist is clearly the expert who acknowledges the patient by always being present in the exercise situation, cheering on the patient and modifying the exercise according to the patient’s symptoms. A significant part of the exercise promotion is used for transferring information regarding the physiological aspects of exercise, for example, about muscles, serotonin, and blood circulation. The information and arguments are important elements in supporting exercise maintenance.

"Regardless of whether it’s medically harmful or not, the experience of exercise should be something that’s not unpleasant in the end, so we have to be there to put on the brakes or give them a push if they are too timid … if they are not used to performing exercise or are scared, we have to be there to guide them, or kind of be around a little more to answer questions. And that’s much easier when they perform exercise here, it’s hard to know what they do and how they do it when they have exercise programs at home.” (17)

"If the patient has been honest, it [the diary] has worked pretty well I think, because you get a picture of what they are doing … well, and also motivation to do it. And for the follow-up … that they can perhaps show that I actually did this. Then I think, … it serves as a small incentive for them, knowing that they are coming back and that they have to do something, have something to show when they get back to the physical therapist.” (13)

**Exercise promotion is understood as facilitation of skills building**

In this category, the physical therapist continuously balances his/her expert knowledge with the ambition
to develop the patient’s own sense of responsibility. The patient must recognize that exercise is beneficial and is an important part of the total management of rheumatic diseases. Realizing the significance of individual responsibility for exercise behavior is important, as well as realizing that performing exercise at the clinic is temporary. The patient must also start to prepare for taking over the initiative to engage in exercise. The primary focus of the exercise promotion lies in trying out different types of exercises with the purpose of implementing the program as a routine. Building high-quality exercise in the clinic is the first priority, although a plan for the future is discussed. The patient is encouraged to contact different gyms in order to survey the options, and the physical therapist occasionally establishes contact with a gym or with a physical therapist within primary health care. Exercise diaries are used in order to help the patient to identify patterns of exercise behavior. The physical therapist discusses with the patient why the exercise behavior has failed in the past and recognizes different barriers and further relates them to a negative exercise pattern. Pros and cons of positive exercise behavior are also described with the intention of enhancing motivation for exercise. In addition, the physical therapist is able to set guidelines for how the patient can overcome those barriers. The physical therapist takes on the role of a potential problem solver concerning both the structure and the exercise program itself and the creation of a safe environment. To some extent, the physical therapist can act as a sounding board in discussions concerning all kinds of thoughts about exercise.

“If we talk about the first meeting, the conversation goes towards why they should perform exercise, and connecting a lot of that to the disease ... Also talking about what they have done before, and what they are up for, and well, inquiring a little. Then when I have gotten a little further, when they perhaps have started exercising, I probably talk more specifically about exercise, I start with more motivational things ... I really want them to know what they are doing and why.” (25)

“She [the patient] brainstorms a lot with me about, about things she plans to do when it comes to activities and that’s, that includes both this, the usual with walks and walking poles and things like that ... it feels like they are, I mean the dialogue and sounding board, I mean that’s my own picture of what we do that’s important, but I mean, I think we are an important dialogue and sounding board a lot of the time, working with maintaining behavior and change, or if it’s a change, or even sort of motivating ... raising, I mean sparking interest for this, to be able to show somebody or talk to somebody later on about what I’m doing, that it’s important to somebody.” (24)

**Exercise promotion is understood as co-creation of awareness**

This category is characterized by equality between the physical therapist and the patient. The patient is seen as a fellow player who needs to put in both cognitive and physical effort during the process, while the physical therapist contributes with expert knowledge and extensive experience of exercise for individuals with rheumatic diseases. Understanding the relationship between the importance of exercise and the effects on the disease through different bodily experiences can thus motivate the patient to establish lifelong exercise behavior. The patient also needs to clearly relate various intensities and loads to different outcomes. A key aspect is the patient’s determination to change. Depending on where in the process of adopting or maintaining exercise behavior the patient is found to be, different exercise programs are tried out and adjusted to the patient’s needs. The program should focus on parts that the patient can handle and can agree to continue outside the clinic. The exercise goals should also be realistic and feasible in the long run, and the patient must determine how the exercise behavior might be transferable to new environments. As a driving force, the patient and the physical therapist jointly create a plan for maintenance after the treatment period, and the patient should look for, and possibly try out, other types of exercise outside the clinic before the treatment period ends. The patient identifies pros and cons for performing or not performing exercise, and these are then discussed with the physical therapist in order to enhance motivation. Open-ended questions focusing on self-efficacy are used, as well as questions regarding how the patient processes the information received regarding exercise. By having the patient write down feelings toward exercising and then discussing them with the physical therapist, exercise diaries are used as a way to recognize and provide awareness of the effects exercise has on the patient. Barriers are also discussed jointly and the patient is urged to identify solutions to overcome these barriers. Modifying the patient’s thoughts, ideas, and myths about setting goals for exercise hopefully makes exercising realistic and lasting.

“You explain ... you try to explain how exercise works in the body, and aerobic exercise, and getting waste products away from the muscles and performing exercise at a moderate level, endurance, light weights, many repetitions and how the gym works, and you are there to see that they do it correctly and so on. And then that they feel, that they get feedback, that they feel better, and that immediately makes it easier to continue.” (1)

“It’s, I mean, a lot of medical history around the whole thing. Around, I mean, to narrow it down. What this
patient, what this person has done earlier in his life and now, and what the patient wants to do now. What could work? And if they come here to perform exercise for a period of time, us making the program, that is, will this person never go to a gym, and is it the worst thing this person knows, then you eliminate it. Maybe try a ball or discussing like, what do you want to do and what do you think would work. And then you can ... I mean, make suggestions by bringing up things that exist, that maybe the person is not aware of." (2)

Exercise promotion is understood as the development of independence and self-reflection

In this category, the physical therapist advocates the patient as an autonomous individual, with resources and capability to take control over his/her exercise behavior. Important steps in this process involve making the patient recognize what kind of exercise to prioritize. Gaining trust in one's own body and how it reacts to different types of exercise can enhance the patient's strength and ability to perform exercise. The patient needs to consider the facts that exercise is something you do for the benefit of your own health, and that the choice is yours. Through exercise, the patient can control some parts of the disease, and therefore summarizing causality is vital. By transferring the responsibility to the patient, he/she can manage the exercise behavior and grow as an individual, without being dependent on a physical therapist. The structure of the exercise promotion is based on exercise behaviors that already work well for the patient. It is important that all new types of exercise fit into the patient’s life. The physical therapist and the patient must always take the whole life situation into consideration and in the long run must place new exercise behavior outside the health care system. This plan for sustainability is established early on with the help of goal-setting. Further, as a way to support the patient, different types of exercise are tried out both inside and outside the clinic. Exercise diaries and pedometers are used to acknowledge the patient's capacity by giving attention and positive feedback on the new behavior. Different obstacles for exercise are discussed and highlighted, but the patient needs to find solutions as well as to verbalize why certain things have not worked out. By creating reflective thinking instead of providing fixed solutions, the physical therapist analyzes different problems in dialog with the patient. Inspiring patients to find new pathways and to see possibilities instead of problems are cornerstones in the physical therapist’s work. A fresh set of eyes is needed every time the physical therapist sees a patient in order to be able to determine where in the process of starting or maintaining a new behavior the patient is. The physical therapist is obviously present and supportive in the beginning of the exercise promotion, but gradually phases out the support. In the beginning, finding the correct exercise level is important, but in order to transfer responsibility to the patient, gradually highlighting personal resources and highlighting self-efficacy becomes more central. By affecting the patient's self-image, and by teaching self-help strategies, the physical therapist eventually kicks the patient out of the nest.

"I can teach them to see possibilities instead of problems ... I see that as the most important task ... Eh ... and to find motivation, to be able to, having adherence to my own exercise behavior, my own care, my own responsibility ... for a long, long time. Because this is what it is about, not getting tired of it. And setting up milestones along the way, and checking them off." (5)

"Yes, the best is of course all the solutions that they come up with themselves. And then you have to listen, something usually comes up in the conversation, something they actually have done. Yes. That I usually leave the car and walk to the store. Great! We can build on that. So, I think it's about, all I see, regarding how insignificant, but just finding what has actually been done, and giving that as positive feedback. Yes, you did that. And now I think you can build on it." (22)

Discussion

The results of this study provide a diverse and complex picture of the ways physical therapists can understand exercise promotion, which is one cornerstone of their profession. They articulate variation in understandings of exercise promotion that might emanate from differences in their perceptions of patients' knowledge, skills, and attitudes for adopting long-term exercise behaviors. Furthermore, this variation might also be related to differences in their perceptions of what the patient needs to do in order take responsibility and how this could be supported by the physical therapist. It is interesting to see that the physical therapists have different ways of utilizing different techniques to support behavior change. One example is exercise diaries that are used for a variety of reasons, from a means of pleasing the physical therapist by providing a check up on patients' actual exercise performance to a tool for self-regulation and empowerment (Holmstrom and Roing, 2010) of patients by acknowledging their capacity and by giving attention to and positive feedback on their new behavior. Rheumatology health professionals view methods of monitoring such as diaries as an important way to support regular physical activity, including exercise (Larkin, Gallagher, Fraser, and Kennedy, 2017), but our study clearly demonstrates the variation among physical therapists regarding why and for whom the monitoring should
be done. Self-monitoring is an effective technique in changing physical activity behavior, including exercise, but it needs to be combined and used in the right way in order to be effective (Michie et al., 2009). The different understandings of exercise promotion might also reflect physical therapists' varied knowledge and skills in the use of self-management techniques. Up until today, behavior change interventions in populations with, for example, rheumatoid arthritis have not had a strong theoretical underpinning (Demmelmaier and Iversen, 2018; Larkin, Kennedy, and Gallagher, 2015b), and this might explain this varied knowledge on and skills in using behavior change techniques.

In the category (A) Exercise promotion is understood as information and monitoring of the behavior, the physical therapist takes a traditional approach of persuading the patients to cooperate and comply (Kyngäs, Duffy, and Kroll, 2000). The patient becomes a passive receiver of information, with the primary task of following the physical therapist’s instructions. This approach reinforces the authority of the physical therapist as the only one having the expert knowledge needed to reach positive outcomes (Lutley and Wishner, 1999). In the category (B) Exercise promotion is understood as facilitation of skills building, the physical therapists also act as sounding boards assuming that the patients need to take some responsible action for their health behavior change through the information that is given. Central to the physical therapist in the category (C) Exercise promotion is understood as co-creation of awareness is to provide support while educating the patients, simultaneously involving them and negotiating on different exercise issues, thus enabling their informed decisions. This facilitating approach is clearly patient-centered (Anderson, 2002; Hudon et al., 2012). In the category (D) Exercise promotion is understood as the development of independence and self-reflection, the physical therapists identify the patients’ own resources and act upon them. The physical therapists’ role is thus to act as a catalyst by increasing patients’ control over their own exercise behavior and then to gradually withdraw the support to enable empowerment (Holmstrom and Roing, 2010; Roberts and Bucksey, 2007). In these terms, advocacy and self-care are cornerstones in the physical therapists’ way of promoting exercise. The different ways of understanding exercise promotion are in accordance with other studies showing physical therapists’ experiences of client participation, either as a paternalistic partnership with the physical therapist as an expert and a compliant patient, an unequal partnership where the patient is persuaded to follow the physical therapist’s decisions, or as a collaboration of equal partnership (Larsson, Liljedahl, and Gard, 2010).

Supporting the category (D) Exercise promotion is understood as the development of independence and self-reflection as the most comprehensive category, previous qualitative research has demonstrated the complexity of regular physical activity by highlighting patients’ perceptions of broader lifestyle preferences and goals in order to sustain regular physical activity including exercise (Kaptein et al., 2013). Maintaining physical activity, including exercise has also been described as the patient’s effort to deflect the focus of attention away from the ill body and toward feelings of well-being and independence (Loeppenthin et al., 2014). However, approaches to facilitate behavior change and self-management such as exercise require putting behavior theories into practice. Rheumatology clinicians who undertake brief training to support self-management describe how this training challenges their professional identity such as working cultures and models of care on learning and implementing skills (Dures et al., 2014). Further, physical therapists following a theory-based skills training program in preparation for a coaching role in a regular physical activity intervention, including exercise, in persons with rheumatoid arthritis identified quite a few challenges in abandoning their traditional expert roles (Nessen, Opava, Martin, and Demmelmaier, 2014). However, the training program improved their knowledge in behavior change techniques (Nessen, Opava, and Demmelmaier, 2018).

**Methodological considerations**

The trustworthiness of a study can be threatened by data that are not truthful or rich enough (Kvale, 2009; Malterud, 2001). Thus, the interviews in the present study were performed by the principal author, who was an experienced interviewer with many years as a physical therapist within rheumatology. Furthermore, different probing strategies were used during the interviews (Kvale, 2009). Also, in order to reach a full variation in the understanding of exercise promotion, the number of participants to be approached was not predefined. Because the findings must be recognizable in a clinical setting and understandable to others, relevant background data were collected for descriptive purposes. Our sample included only one male physical therapist, which might not mirror the physical therapist population. However, male physical therapists are a minority in Sweden and only a few work within rheumatology. It is important that the data are credible and that the results are stable, thus independent analyses of the data were made by more than one researcher, and the data were also analyzed from the perspective of different professions (i.e. physical therapy and occupational therapy).
(Creswell, 2013). The findings were carefully checked against the data, and the research process included peer-review by two expert researchers (Creswell, 2013). Phenomenography aims at capturing the range of collective understanding within a particular group, and the researcher’s interpretations are therefore on a collective level rather than on an individual interview basis (Åkerlind, 2012). Thus, feedback from individual informants is not an appropriate validity check and was therefore not sought in the present study. However, the categories identified were still supported by quotations from various individual participants.

**Clinical relevance**

One way of understanding and making clinical use of the present results might be in the light of self-determination theory, stating that individuals might have different motivational drives (autonomous or controlled) for engaging in regular physical activity including exercise (Deci and Ryan, 2000; Ryan and Deci, 2000). Controlled motivation confers individual engagement in behaviors for external reasons and/or to avoid feelings of guilt, while autonomous motivation, in contrast, entails personal, enjoyable, and beneficial reasons for engagement (Deci and Ryan, 2000; Ryan and Deci, 2000). Autonomous motivation is important for engagement in and maintenance of regular physical activity, including exercise, among individuals with rheumatoid arthritis (Hurkmans et al., 2010; Knittle et al., 2016). However, for some it might still be necessary to hand over the responsibility to a physical therapist (Swardh, Biguet, and Opava, 2008); ideally to one who informs and monitors behavior and who enhances controlled motivation by applying pressure and providing facts. Controlled motivation can also be supported by a physical therapist who is acting as a sounding board and an expert, thus facilitating skills building. On the other hand, patients with some level of autonomous motivation can be supported through co-creation of awareness of exercise benefits and assisting in realistic goal-setting without external pressure. Autonomous motivation can also be supported by a physical therapist who encourages the patient to explore the value of exercise in relation to his/her life situation and by affecting the patient’s self-image, thus developing independence and self-reflection. Autonomy supportiveness, including increasing feelings of competence and responsibility, might move patients from controlled motivation to autonomous motivation (Deci and Ryan, 1987, 2000). Hence, physical therapists who understand exercise promotion as development of independence and self-reflection and possessing a more comprehensive repertoire including all the other understandings, might thus be better prepared to serve the needs of patients with different motivational drives. We suggest that the results of the present study might contribute to understanding the variations in physical therapists’ exercise promotion and to reflections on how this might influence their patients’ behavior.

**Conclusion**

Physical therapists working with patients having rheumatic diseases understand exercise promotion in various ways that differ with respect to comprehensiveness and patient-centeredness. The results further suggest that the physical therapists’ use of behavior change techniques serve different purposes in exercise promotion, varying from providing external control to facilitation of self-management. The present results might thus be used to develop awareness, knowledge, and skills for more deliberate exercise promotion among physical therapists working with patients having rheumatic diseases. While the patients’ voices are silent in the present work, their experiences of working with physical therapists in exercise promotion should be explored in future studies.

**Declaration of Interest**

The authors report no conflicts of interest.

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**References**

Åkerlind GS 2012 Variation and commonality in phenomenographic research methods. Higher Education Research and Development 31: 115–127.

Anderson EB 2002 Patient-centeredness: A new approach. Nephrology News and Issues 16: 80–82.

Barnard A, McCosker H, Gerber R 1999 Phenomenography: A qualitative research approach for exploring understanding in health care. Qualitative Health Research 9: 212–226.

Baxter S, Smith C, Treharne G, Stebbings S, Hale L 2015 What are the perceived barriers, facilitators and attitudes to exercise for women with rheumatoid arthritis? A qualitative study. Disability and Rehabilitation 38: 773–780.
Understanding how to determine the intensity of physical activity - An interview study among individuals with rheumatoid arthritis. Disability and Rehabilitation 31: 458–465.

Caspersen CJ, Powell KE, Christenson GM 1985 Physical activity, exercise, and physical fitness: Definitions and distinctions for health-related research. Public Health Reports 100: 126–131.

Conn VS, Hafdal AR, Minor MA, Nielsen P 2008 Physical activity interventions among adults with arthritis: Meta-analysis of outcomes. Seminars in Arthritis and Rheumatism 37: 307–316.

Creswell JW 2013 Qualitative inquiry and research design: Choosing among five approaches (3rd ed). Thousand Oaks: SAGE Publications.

Dean E 2009a Physical therapy in the 21st century (Part I): Toward practice informed by epidemiology and the crisis of lifestyle conditions. Physiotherapy Theory and Practice 25: 330–353.

Dean E 2009b Physical therapy in the 21st century (Part II): Evidence-based practice within the context of evidence-informed practice. Physiotherapy Theory and Practice 25: 354–368.

Deci EL, Ryan RM 1987 The support of autonomy and the control of behavior. Journal of Personality and Social Psychology 53: 1024–1037.

Deci EL, Ryan RM 2000 The "What" and "Why" of goal pursuits: Human needs and the self-determination of behavior. Psychological Inquiry 11: 227–268.

Demmelmaier I, Iversen MD 2018 How are behavioral theories used in interventions to promote physical activity in rheumatoid arthritis? A systematic review. Arthritis Care and Research 70: 185–196.

Dures E, Hewlett S, Ambler N, Jenkins R, Clarke J, Gooberman-Hill R 2014 Rheumatology clinicians’ experiences of brief training and implementation of skills to support patient self-management. BMC Musculoskeletal Disorders 15: 108.

Eurenius E, Biguet G, Stenström CH 2003 Attitudes toward physical activity among people with rheumatoid arthritis. Physiotherapy Theory and Practice 19: 53–62.

Garber CE, Blissmer B, Deschenes MR, Franklin BA, Lamonte MJ, Lee IM, Nieman DC, Swain DP, American College of Sports Medicine 2011 American College of sports medicine position stand. Quantity and quality of exercise for developing and maintaining cardiorespiratory, musculo-skeletal, and neuromotor fitness in apparently healthy adults: Guidance for prescribing exercise. Medicine and Science in Sports and Exercise 43: 1334–1359.

Giorgi A 1999 A phenomenological perspective on some-phenomenographic results on learning. Journal of Phenomenological Psychology 30: 68–93.

Holmstrom I, Roing M 2010 The relation between patient-centeredness and patient empowerment: A discussion on concepts. Patient Education and Counseling 79: 167–172.

Hudson C, Fortin M, Haggerty J, Loignon C, Lambert M, Poitras ME 2012 Patient-centered care in chronic disease management: A thematic analysis of the literature in family medicine. Patient Education and Counseling 88: 170–176.

Hurkmans EJ, de Gucht V, Maes S, Peeters AJ, Ronday HK, Vliet Vlieland TP 2011a Promoting physical activity in patients with rheumatoid arthritis: Rheumatologists’ and health professionals’ practice and educational needs. Clinical Rheumatology 30: 1603–1609.

Hurkmans EJ, Jones A, Li LC, Vliet Vlieland TP 2011b Quality appraisal of clinical practice guidelines on the use of physiotherapy in rheumatoid arthritis: A systematic review. Rheumatology 50: 1879–1888.

Hurkmans EJ, Maes S, de Gucht V, Knittle K, Peeters AJ, Ronday HK, Vliet Vlieland TP 2010 Motivation as a determinant of physical activity in patients with rheumatoid arthritis. Arthritis Care and Research 62: 371–377.

Jensen GM, Gwyer J, Shepard KF 2000 Expert practice in physical therapy. Physical Therapy 80: 28–52.

Jones M, Grimmer K, Edwards I, Higgs J, Trede F 2006a Challenges in applying best evidence to physiotherapy practice: Part 2 - Health and clinical reasoning models to facilitate evidence-based practice. Internet Journal of Allied Health Sciences and Practice 4: 9.

Jones M, Grimmer K, Edwards I, Higgs J, Trede F 2006b Challenges in applying best evidence to physiotherapy. Internet Journal of Allied Health Sciences and Practice 4: 11.

Kaptein SA, Backman CL, Badley EM, Lacaille D, Beaton DE, Hofstetter C, Gignac MA 2013 Choosing where to put your energy: A qualitative analysis of the role of physical activity in the lives of working adults with arthritis. Arthritis Care and Research 65: 1070–1076.

Knittle K, De Gucht V, Hurkmans E, Vliet Vlieland TV, Maes S 2016 Explaining physical activity maintenance after a theory-based intervention among patients with rheumatoid arthritis: Process evaluation of a randomized controlled trial. Arthritis Care and Research 68: 203–210.

Kvale S 2009 InterViews: Learning the craft of qualitative research interviewing (2nd ed). Los Angeles: Sage Publications.

Kynigis H, Duffy ME, Kroll T 2000 Conceptual analysis of compliance. Journal of Clinical Nursing 9: 5–12.

Larkin L, Gallagher S, Cramp F, Brand C, Fraser A, Kennedy N 2015a Behaviour change interventions to promote physical activity in rheumatoid arthritis: A systematic review. Rheumatology International 35: 1631–1640.

Larkin L, Gallagher S, Fraser A, Kennedy N 2017 If a joint is hot it’s not the time: Health professionals’ views on developing an intervention to promote physical activity in rheumatoid arthritis. Disability and Rehabilitation 39: 1106–1113.

Larkin L, Kennedy N, Fraser A, Gallagher S 2017 ‘It might hurt, but still it’s good’: People with rheumatoid arthritis beliefs and expectations about physical activity interventions. Journal of Health Psychology 22: 1678–1690.

Larkin L, Kennedy N, Gallagher S 2015b Promoting physical activity in rheumatoid arthritis: A narrative review of behaviour change theories. Disability and Rehabilitation 37: 2359–2366.

Larsson I, Liljedahl K, Gard G 2010 Physiotherapists’ experience of client participation in physio-therapy interventions: A phenomenographic study. Advances in Physiotherapy 12: 217–223.

Larsson J, Holmström I 2007 Phenomenographic or phenomenological analysis: Does it matter? Examples from a study on anaesthesiologists’ work. International Journal of Qualitative Studies on Health and Well-Being 2: 55–64.

Larsson J, Holmström I, Lindberg E, Rosenqvist U 2004 Trainee anaesthetists understand their work in different ways: Implications for specialist education. British Journal of Anaesthesia 92: 381–387.
Law RJ, Breslin A, Oliver EJ, Mawn L, Markland DA, Maddison P, Thom JM. 2010 Perceptions of the effects of exercise on joint health in rheumatoid arthritis patients. Rheumatology 49: 2444–2451.

Loeppenthin K, Ebensen B, Ostergaard M, Jennum P, Thomsen T, Midtgaard J. 2014 Physical activity maintenance in patients with rheumatoid arthritis: A qualitative study. Clinical Rehabilitation 28: 289–299.

Lutfey KE, Wishner WJ. 1999 Beyond “compliance” is “adherence”. Improving the prospect of diabetes care. Diabetes Care 22: 635–639.

Malterud K. 2001 Qualitative research: Standards, challenges, and guidelines. Lancet 358: 483–488.

Marton F. 1981 Phenomenography - Describing conceptions of the world around us. An International Journal of Learning and Cognition 10: 177–200.

Michie S, Abraham C, Whittington C, McAteer J, Gupta S. 2009 Effective techniques in healthy eating and physical activity interventions: A meta-regression. Health Psychology 28: 690–701.

Michie S, Richardson M, Johnston M, Abraham C, Francis J, Hardeman W, Eccles MP, Cane J, Wood CE. 2013 The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: Building an international consensus for the reporting of behavior change interventions. Annals of Behavioral Medicine 43: 81–91.

Nessen T, Opava CH, Demmelmaier I. 2018 Physiotherapists’ adoption of a theory-based skills training program in guiding people with rheumatoid arthritis to health-enhancing physical activity. International Journal of Behavioral Medicine 25: 438–447.

Nessen T, Opava CH, Martin C, Demmelmaier I. 2014 From clinical expert to guide: Experiences from coaching people with rheumatoid arthritis to increased physical activity. Physical Therapy 94: 644–653.

Petursdottir U, Arnadottir SA, Halldorsdottir S. 2010 Facilitators and barriers to exercising among people with osteoarthritis: A phenomenological study. Physical Therapy 90: 1014–1025.

Piercy KL, Troiano RP, Ballard RM, Carlson SA, Fulton JE, Galuska DA, George SM, Olson RD. 2018 The physical activity guidelines for Americans. JAMA 320: 2020–2028.

Powell KE, King AC, Buchner DM, Campbell WW, DiPietro L, Erickson KI, Hillman CH, Jakicic JM, Janz KF, Katzmarzyk PT, et al. 2018 The scientific foundation for the physical activity guidelines for Americans (2nd ed). Journal of Physical Activity and Health 17: 1–11.

Rhodes RE, Fiala B. 2009 Building motivation and sustainability into the prescription and recommendations for physical activity and exercise therapy: The evidence. Physiotherapy Theory and Practice 25: 424–441.

Roberts L, Bucksey SJ. 2007 Communicating with patients: What happens in practice? Physical Therapy 87: 586–594.

Ryan RM, Deci EL. 2000 Intrinsic and extrinsic motivations: Classic definitions and new directions. Contemporary Educational Psychology 25: 54–67.

Sjostrom B, Dahlgren LO. 2002 Applying phenomenography in nursing research. Journal of Advanced Nursing 40: 339–345.

Svensson L. 1997 Theoretical foundations of phenomenography. Higher Education Research and Development 16: 159–171.

Swardh E, Biguet G, Opava CH. 2008 Views on exercise maintenance: Variations among patients with rheumatoid arthritis. Physical Therapy 88: 1049–1060.

van Den Berg MH, Ronday HK, Peeters AJ, Vooigt-van der Harst EM, Munneke M, Breedveld FC, Vliet Vlieland TP. 2007 Engagement and satisfaction with an internet-based physical activity intervention in patients with rheumatoid arthritis. Rheumatology 46: 545–552.

Verhagen E, Engbers L. 2009 The physical therapist’s role in physical activity promotion. British Journal of Sports Medicine 43: 99–101.

Vliet Vlieland TP, Pattison D. 2009 Non-drug therapies in early rheumatoid arthritis. Best Practice and Research: Clinical Rheumatology 23: 103–116.

Wilcox S, Der Ananian C, Abbott J, Vraelz J, Ramsey C, Sharpe PA, Brady T. 2006 Perceived exercise barriers, enablers, and benefits among exercising and nonexercising adults with arthritis: Results from a qualitative study. Arthritis and Rheumatism 55: 616–627.

Withall J, Haase AM, Walsh NE, Young A, Cramp F. 2016 Physical activity engagement in early rheumatoid arthritis: A qualitative study to inform intervention development. Physiotherapy 102: 264–271.