

Self-Management, Fear of Movement, and Pain in Working Adults with Low Back Pain: A Qualitative Longitudinal Study

Minna Roine¹⁻³, Eira Karvonen⁴, Matti Munukka¹, Ari Heinonen¹, Pirjo Vuoskoski¹

¹Faculty of Sport and Health Sciences, University of Jyväskylä, Jyväskylä, Finland; ²Nursing Research Center, University of Helsinki and Helsinki University Hospital, Helsinki, Finland; ³Internal Medicine and Rehabilitation, University of Helsinki and Helsinki University Hospital, Helsinki, Finland; ⁴Physiotherapy Consulting Paatelma & Karvonen Ky, Helsinki, Finland

Correspondence: Minna Roine, Email roinmi@student.jyu.fi

Purpose: The present study explored the experiences of working individuals with low back pain regarding self-management, fear of movement and pain during a 12-month follow-up period after receiving either direct access (DA) or conventional physical therapy.

Patients and Methods: Data were collected through electronic questionnaires containing open-ended questions on physical therapy, fear of movement and pain. These were administered at baseline (after the initial physical therapy visit) and at 3-, 6-, and 12-month follow-ups. Participants were clients from real-life clinical settings in primary care or emergency departments. Fifteen participants completed all follow-ups; ten from DA and five from conventional physical therapy.

Results: Two distinct client types emerged: the *pilot*, who actively engaged in recovery with support from the physical therapist, and the *passenger*, who adopted a more passive approach by avoiding pain-inducing activities. These types were reflected in two main categories: 1) “Understanding my pain”, with three subcategories: Nature of my pain, Daily living with my pain, and Knowing the cause of my pain, and 2) “Managing my pain”, with three subcategories: Ownership of my recovery, Courage to be active, and Relieving pain.

Conclusion: The findings underscore the individualized nature of self-management, fear of movement and pain experiences over 12 months follow-up. While personal strategies varied, guidance from physical therapist appeared instrumental in supporting the adoption of an active pilot-like role in recovery.

Keywords: direct access, qualitative content analysis, physical activity, rehabilitation, musculoskeletal

Introduction

Low back pain (LBP) is the leading cause of disability worldwide and contributing to a growing burden of disability and rising health-related costs.¹ Although acute LBP is typically a benign condition, symptoms can recur and progress to chronic disability particularly among individuals of working age.² The increasing incidence of LBP in the working population has led to substantial economic consequences including sickness-related absences, early retirement due to disability and high utilization of health care resources.¹

Despite its high prevalence and impact, LBP is a condition for which rehabilitation can benefit a large number of individuals.¹ Buchbinder et al³ point out a persistent gap between evidence and clinical practice in LBP management. They advocate a reassessment of clinical practices, noting that procedures such as unnecessary imaging, opioid prescriptions, spinal injections and surgery are high-cost and low-value interventions. Simula et al⁴ further emphasize the evidence-based low-cost rehabilitative approaches, such as promoting physical activity and reducing pain-related fear, are not fully integrated into practice in Finland. Direct access (DA) which allows individuals to receive physical therapy without a physician’s referral, has been increasingly utilized to manage musculoskeletal (MSK) conditions such as LBP more effectively.⁵ DA is considered a safe and cost-effective model compared to the traditional medical pathway

which typically leads to referral-based access to physical therapy. Studies have shown that DA could lead to improved work and health outcomes.⁶⁻⁹

In Finland, DA services are available to adults (aged 18 or over) experiencing benign MSK conditions in the early phase of pain (less than 12 weeks in duration). Physical therapists providing DA are trained and experienced physical therapists who are authorized to assess the need for sick leave and prescribe over-the-counter medication, tasks that fall outside the scope of conventional physical therapy.¹⁰ DA typically involves a single visit focused on clinical reasoning, physiotherapeutic diagnosis and self-management guidance whereas conventional physical therapy often includes of three to five sessions of therapeutic exercise.

More than half of individuals with persistent LBP report moderate pain even one year after while acute pain tends to resolve in the first six weeks.¹¹ Fear of movement (FOM) can emerge after the acute phase of pain and may lead to maladaptive beliefs or avoidance behaviors that impair function.^{12,13} FOM has been shown to mediate the relationship between pain and disability¹⁴ and is a known predictor of both disability and return-to-work outcomes in LBP clients.^{15,16} A systematic review by Deslauriers et al¹⁷ suggests that delays in accessing physical therapy may lead to worsened outcomes including increased pain, disability and psychological symptoms, and health-care costs. Therefore, rapid access to physical therapy, for example through DA, may help prevent chronic disability in working individuals by providing timely and personalized rehabilitation.^{15,18,19} Additionally, the psychological predictors at the beginning of pain, such as high pain intensity, depression and fear of movement seem to predict trajectories of disability in LBP.²⁰ Yet, the quantitatively-derived trajectory pain patterns of LBP may not reflect the population-based averages as LBP

Box 1 Open-Ended Questions in in-House Questionnaire

Questions to explore the anamnesis of the participants
• Profession and description of work (eg, office work or physical work) • State of health. Describe your state of health more specifically if you wish. • Other illnesses. If you answered “yes” describe the illnesses below if you wish. • Is this the first time you have experienced the current pain / ailment? Tell more about the start of the current symptoms if you wish. • Have you ever visited a medical doctor or a physiotherapist because of low back pain before the current course of treatment? Describe your previous treatment for your low back pain if you wish. • Describe where in your body you feel pain and how does it feel – pulsating, aching, tingling, numbing, or something else in your own words? • If your low back pain has continued or renewed, what do you think is the reason? Describe in your own words. [asked at 3, 6, and 12 months]
Questions to explore the challenges in daily life due to low back pain
• Which factors cause pain / ailment the most? • What eases the pain / ailment? • Identify one important activity in your life that you are unable to do or have difficulty performing because of the low back pain problem. • If the same low back pain has renewed, was the previous guidance from the physiotherapist useful in treating the renewed pain?
Questions to explore the meaningfulness of physiotherapy visit
• Did the visit to the physiotherapist help you in your low back pain? Describe in more detail if you wish. • If you experienced fear due to low back pain did the visit to the physiotherapist decrease this fear? Describe in more detail if you wish. • Have you been able to perform the exercises that the physiotherapist gave you? Describe in more detail if you wish. • Was the physiotherapy you received adequate? Describe in more detail if you wish.
Questions to explore the follow-up treatment plans
• Are you now on sick leave because of the same low back pain? Describe in more detail if you wish. • Have you asked to be treated by a physiotherapist again because of the same low back pain? Describe in more detail if you wish. • Have you asked to be treated by a medical doctor because of the same low back pain? If you answered “yes” describe in more detail why you asked to be treated by a medical doctor.

experiences vary between individuals.²¹ As such, understanding the role of FOM in recovery is essential, particularly for working individuals.¹⁶

Although extensive research exists on LBP management^{2,22–24} and the DA model,^{8,9,25–27} there is limited knowledge about long term client outcomes and experiences following DA visits. Gallotti et al⁸ found improvement in various work and health outcomes across different DA settings. In Finland Karvonen¹⁹ reported reduced fear of pain and increased physical activity among clients three months after a DA visit. However, deeper insights into clients' perceptions of self-management, FOM and pain are still needed.

This qualitative explorative study examined the experiences of working individuals with LBP over a 12-month period following either DA or conventional physical therapy visit. The research question was: How do working individuals with LBP experience self-management, fear of movement and pain after their physical therapy visit?

Materials and Methods

Ethics

This study involved a 12-month follow-up of working individuals who sought physical therapy services for LBP in primary health care or emergency departments in the wellbeing services counties in Southern or Eastern Finland. This study was conducted according to the declaration of Helsinki and ethical approval was granted by Helsinki University Hospital Regional Committee on Medical Research Ethics (HUS/2710/2020). Research permits were obtained from all participating organizations: Helsinki University Hospital (Hyvinkää Hospital) (§ 10/9.6.2021) and the wellbeing services counties Keusote (KEUDno-2020-8154) and Siunote (3369/13.00.01.01/2020, § 39/2021). Potential participants were informed about the study in person by their treating physical therapist. Those who agreed to participate received an information sheet and were asked to sign an informed consent form including permission for publication of anonymized responses. Participation was voluntary and individuals could withdraw from the study at any time.

Data Collection

Data were collected using two digital questionnaires which were linked to the secure Helsinki University Hospital Electronic Case Report Form (HUSECRF) database. These were administrated at baseline (that is initial physical therapy visit) and at 3-month, 6-month and 12-month follow-up points.

The first questionnaire was an in-house instrument that included the Numeric Pain Rating Scale (NPRS), – a valid, reliable and widely used measure of pain intensity^{28–30} – as well as additional items about sickness-related work absences, visits to physicians, medication use, and open-ended questions. The open-ended questions (see [Box 1](#)) invited participants to explain in writing the reasons behind their selected pain scores. The second questionnaire was the Finnish version of the 13-item Tampa Scale for Kinesiophobia (TSK-13-FIN), a validated tool for assessing FOM.^{31–35}

The time between the initial physical therapy visit and the baseline questionnaire response ranged from 1 to 49 days, with a mean delay of 12 days. Participants received reminder notifications on the day after the questionnaires were sent and on two subsequent occasions if no response was received.

Participant Recruitment

The participants were working individuals aged 18 years or over. Full-time students and individuals in job training were also eligible for inclusion. Recruitment took place between fall 2021 and December 2023. In total, 205 physical therapy clients provided consent in the study. 113 participants completed the baseline questionnaire, resulting in a response rate of 55% (n = 113). Fifteen (n = 15) participants completed all follow-up questionnaires at 3-month, 6-month and 12-month follow-up points, and were therefore included in the final qualitative analysis.

Data Analysis

A qualitative approach drawing on the interpretivist paradigm³⁶ was employed to gain deeper understanding of clients' experiences of self-management, FOM and pain. This approach allowed for the exploration of variations in participants'

descriptions over the 12-month follow-up. The dataset comprised 67 pages of pseudonymized transcript data (A4; Times New Roman 12; spacing 1.5; margins 2.54 cm).

An inductive, data-driven qualitative content analysis (QCA) was conducted to construct typologies of clients' experiences. The analysis followed the framework outlined by Margrit Schreier, which emphasizes the systematic reduction of data and the development of a coding frame to conceptualize the underlying meanings.³⁷ In this study, meaning was understood as personal and context-dependent, reflecting participants' real-life perceptions of the phenomena.³⁸

The QCA process began with reading and re-reading the entire dataset several times. The data were then segmented into coding units, a coding frame was developed and tested and the analysis was carried out.³⁷ Initial coding was performed using Microsoft Word. Thematic segmentation was used to identify coding units, which were then collaboratively reduced to shared meaning relations³⁷ by two researchers (MR, PV). These meaning relations were further scrutinized and condensed into subcategories and main categories.³⁷ From these categories client typologies, referred to as "client types" in this study, were developed by grouping common features and characteristics.³⁷ This iterative circular process enabled abstractions across individual cases and supported the construction of higher-level interpretations.³⁷ Each step of the analysis was critically reviewed through discussions with the research team to ensure rigor and reflexivity.

In addition to qualitative data, the questionnaires included numeric data on FOM and pain, which were used as descriptive background information to contextualize the QCA findings. The descriptive statistics (means and standard deviations) were calculated for FOM (TSK-13-FIN) and pain (NPRS) using Python's statistical functions. Drop-out statistical analyses were performed with IBM SPSS Statistics version 29.0.1.0 (see [Supplementary material](#)). Integrating the quantitative data set alongside the qualitative data enabled a more nuanced and multifaceted understanding of the phenomena under investigation.³⁹

Results

Of the 15 participants included in the QCA, ten were clients who received physical therapy in DA and five received conventional physical therapy. Eleven participants were women and four were men. They were between the ages of 20 and 65 (mean age = 51). Participants represented a variety of occupations: seven described their work as office-based work, two as a combination of office-based and physical work, five as primarily physical work, and one as seated work. Eleven participants reported experiencing chronic LBP while four were encountering LBP for the first time. During the 12-month follow-up period, four participants (Identification Number (ID)97, ID110, ID117, ID162) described recovery from their LBP, three (ID115, ID177, ID192) underwent back surgery, and two (ID123, ID192) retired. Five participants (ID25, ID105, ID138, ID171, ID196) reported no significant change in their condition, one (ID126) experienced recurrence of pain, and one (ID103) reported shoulder pain instead of LBP at the end of the follow-up. See [Table 1](#) for demographic details of the participants included in the QCA.

Additionally, participant demographics of all participants at each time-point are presented in detail in [Table 2](#). These data provide the contextual background for interpreting the results of the QCA.

Analysis of the client experiences revealed two distinct client types: the "pilot" and the "passenger". These types were constructed by identifying shared features and characteristics across two main categories and their respective subcategories which emerged from the QCA. The first main category, "Understanding my pain", includes three subcategories: Nature of my pain, Daily living with my pain, and Knowing the cause of my pain. The second main category, "Managing my pain", comprises the subcategories: Ownership of my recovery, Courage to be active, and Relieving pain. [Table 3](#) presents the main categories and subcategories with data reduction and representative narratives.

The following sections further explore the two client types and how they are reflected in the generated categories.

Client Types and Their Manifestation in the Categories

Two aggregate-level client types, the "pilot" and the "passenger", were derived from the data. The *pilot* typology reflects clients who adopt an active role in their recovery, placing trust in the physical therapist's examination, explanations, and guidance. In contrast the *passenger* typology represents clients who tend to avoid physical activities that might provoke

Table 1 Participant Demographics of Clients in Qualitative Analysis

ID	Age (years)	Sex	DA or Other Referral Method	Acute/ Chronic Pain	Job Description	Self-Evaluated Health Status (0–10), Other Illnesses and Voluntary Description at Baseline	TSK-13-FIN				NPRS				Client Type
							bl	3mo	6mo	12mo	bl	3mo	6mo	12mo	
25	54	Female	DA	Chronic	Nurse manager, mainly office work for 4 years	7, joint and back pain almost daily but at the moment a little better	22	24	22	23	3	4	3	4	Passenger/pilot
97	29	Male	DA	Acute	System specialist, office work	8, some muscle stiffness in the lower back still 7 days after visiting the physiotherapist.	19	16	14	15	7	0	1	0	Pilot
103	51	Male	Other	Chronic	Supervisor, mainly office work	8, sleep apnea	28	25	24	21	4	1	6	1	Passenger
105	59	Male	DA	Chronic	Shutter installer, physical work	5, today my back got sore at work, hypertension	23	15	20	15	8	2	2	5	Passenger/pilot
110	20	Female	DA	Acute	Student in open university with a goal of getting an official study place	10, I think my health is good at the moment. I am healthy in every way, and I do not have lower back pain or any other injury. The worst lower back pain lasted approx. 2 weeks, still a little stiff in my back, but I can already do normal things.	25	27	19	20	3	3	0	0	Pilot
115	61	Female	DA	Chronic	Practical nurse, office and physical work	7, Back pains that have plagued me for years, at times the symptoms have remained under control. Now worsened over a few months. Hypertension, sleep apnea	24	26	27	19	8	6	6	1	Passenger/pilot

(Continued)

Table I (Continued).

ID	Age (years)	Sex	DA or Other Referral Method	Acute/ Chronic Pain	Job Description	Self-Evaluated Health Status (0–10), Other Illnesses and Voluntary Description at Baseline	TSK-13-FIN				NPRS				Client Type
							bl	3mo	6mo	12mo	bl	3mo	6mo	12mo	
117	48	Female	Other	Chronic	Bachelor of Social Services, counsellor in the rehabilitation unit of child protection. Office work, sitting on the sofa and in the kitchen, everyday messing around with young people, driving.	7, blood pressure medication, significant overweight, poor general condition, no physical activities.	43	27	25	26	9	0	0	1	Pilot
123	63	Female	DA	Chronic	School secretary, office work, a lot of work with computer	7, Generally speaking, good, but every day something is going against the grain. It depends on the age. My back hurts from time to time if I even do things that put a strain on my back. Asthma under control at the moment. Asthma and irritable bowel syndrome requiring continuous medication. The umbilical hernia has already been treated.	21	25	24	22	1	4	5	1	Pilot
126	43	Female	Unknown	Acute	Practical nurse, I work in a kindergarten in a group of children under 3 years old.	8, I am an active exerciser in my spare time. I have rarely needed to see a doctor.	33	25	25	31	2	2	4	7	Passenger

138	57	Female	DA	Chronic	Graphic designer / office work, on the computer	7, the lower back has been a “crank” for years, [pain] has now started to get more difficult and the legs sometimes go under. Weight increased, exercise decreased, not terribly good condition. Arrhythmias, high blood sugar, hypertension, osteoarthritis, fibromyalgia (maybe), irritable bowel syndrome.	26	27	31	27	2	6	3	2	Passenger/ pilot
162	61	Female	DA	Chronic	Metal worker. Assembly work, physical work.	7, lower extremity pains	33	26	18	22	5	3	2	3	Pilot
171	59	Male	DA	Chronic	Taxi driver	6, I’m tired.	46	43	45	46	7	7	5	2	Passenger
177	47	Female	Other	Chronic	Quality controller, physical, mostly standing work.	8, my health is otherwise, apart from back pain, very good at the moment. As other diseases, asthma, anxiety disorder.	25	31	29	18	10	7	7	0	Passenger
192	65	Female	DA	Chronic	Kindergarten manager / early education teacher, the work is physical, working in a large group of children 100%	10, healthy. No other illnesses.	29	28	29	27	8	4	4	8	Passenger/ pilot
196	43	Female	Other	Acute	Office work	8. Other illnesses yes [no more information available]	30	33	30	33	9	4	4	3	Passenger

Abbreviations: ID, Identification Number; DA, direct access; TSK-13-FIN, the Tampa Scale for Kinesiophobia 13 items in Finnish language; NPRS, the Numeric Pain Rating Scale; bl, baseline; mo, months.

Table 2 Numeric Participant Demographics of All Participants at All Time-Points

	Total Sample (N=113)	Direct Access Physical Therapy				Conventional Physical Therapy			
		Baseline (N=81)	3mo (N=33)	6mo (N=18)	12mo (N=12)	Baseline (N=32)	3mo (N=12)	6mo (N=6)	12mo (N=6)
Age years (mean, min-max)	43 (20–65)	43 (20–65)	45 (20–65)	48 (20–65)	52 (20–65)	44 (20–61)	47 (20–60)	49 (43–59)	49 (43–59)
Gender									
Female	82	56	26	14	9	26	8	4	4
Male	31	25	7	4	3	6	4	2	2
First time LBP	29	20	6	4	3	9	5	3	3
Geographic location									
Eastern Finland	83	61	27	15	10	22	7	4	4
Southern Finland	30	20	6	3	2	10	5	2	2
Physiotherapy outlet									
Emergency room	38	32	14	9	7	6	4	3	3
Outpatient clinic	75	49	19	9	5	26	8	3	3
TSK-13-FIN (mean; Wald 95% CI)		26.4 [24.8 to 28.0]	26.2 [24.5 to 27.8]	23.7 [22.1 to 25.2]	24.5 [22.7 to 26.3]	27.4 [24.8 to 30.0]	26.2 [23.9 to 27.6]	23.7 [24.2 to 26.8]	24.5 [21.4 to 26.6]
NPRS (mean; Wald 95% CI)		5.2 [4.6 to 5.8]	3.6 [3.1 to 4.2]	2.6 [2.2 to 3.0]	2.4 [1.9 to 3.0]	6.1 [5.2 to 7.1]	2.8 [1.8 to 3.7]	3.8 [2.9 to 4.8]	2.8 [1.9 to 3.8]
Currently on sick leave due to same LBP		13	n/a	n/a	n/a	8	2	1	1
Visit to medical doctor due to same LBP		n/a	4	1	1	n/a	9	3	3
Use of medication due to LBP		70	17	6	5	32	6	4	4

Abbreviations: n/a, not available; NPRS, Numeric Pain Rating Scale; TSK-13-FIN, Tampa Scale for Kinesiophobia 13 items in Finnish language; LBP, low back pain; bl, baseline; mo, months.

Table 3 Categories of Qualitative Content Analysis

Main Category	Subcategory	Data Reduction	Representative Narratives Within Data
1) Understanding my pain	Nature of my pain	Onset of pain	
		Pain duration	Long-standing Previous First time
		Quality of pain	Persistent Intermittent Reduction of symptoms
	Daily living with my pain	Living with pain Influences of pain Recurrence or prolonging of the pain Pain in activities/positions that cause pain	Individually experienced
	Knowing the cause of my pain	Explanation for pain	Reassurance on non-threatening nature of pain
		Reason for pain from medical explanations	Imaging
2) Managing my pain	Ownership of my recovery	Adopting active coping strategies to support the recovery	Examination Explaining pain Guidance in function / positions / exercises Making follow-up plans Assistive devices
	Courage to be active	Adopting active coping strategies to support braver use of back	Promoting physical activity Trust in physiotherapist
		Physical activity	Doing normal things despite the pain
	Relieving pain	Adopting active coping strategies for pain relief	(see Ownership of my recovery above)
		Getting along with the pain	Avoiding functions that cause pain
		Pain relief from medical explanations	Pain medication, sick leaves, surgery

pain and attribute their condition to external or pathological causes. For these individuals, the potential to influence their pain through active self-management appears uncertain. Changes in client roles over the follow-up period were also described suggesting that these typologies may be fluid rather than fixed. The metaphors, *pilot* and *passenger*, were chosen to illustrate the roles the clients assume in managing their LBP and the possible associated FOM. These client types and their manifestation across the main categories are illustrated in [Figure 1](#).

In the data, five clients (ID97, ID110, ID117, ID123, ID162) were identified as pilots. Out of the five, four reported recovery during the follow-up period, and one client (ID123) described successfully managing chronic pain through active self-strategies. Notably four of the pilots (ID97, ID110, ID123, ID162) were DA clients.

You have to dare to keep moving your back, despite the slight pain, staying still is the worst thing for your back. (ID123 at baseline)

Five clients (ID103, ID126, ID171, ID177, ID196) were identified as passengers. One (ID177) underwent back surgery and recovered during the follow-up. Another (ID103) reported reduced FOM and pain during the follow-up, but no change in physical activity. One client (ID126) reported a recurrence of LBP due to their physically demanding work in childcare. Another client (ID171) reported persistent FOM throughout the follow-up despite a notable decrease in pain.

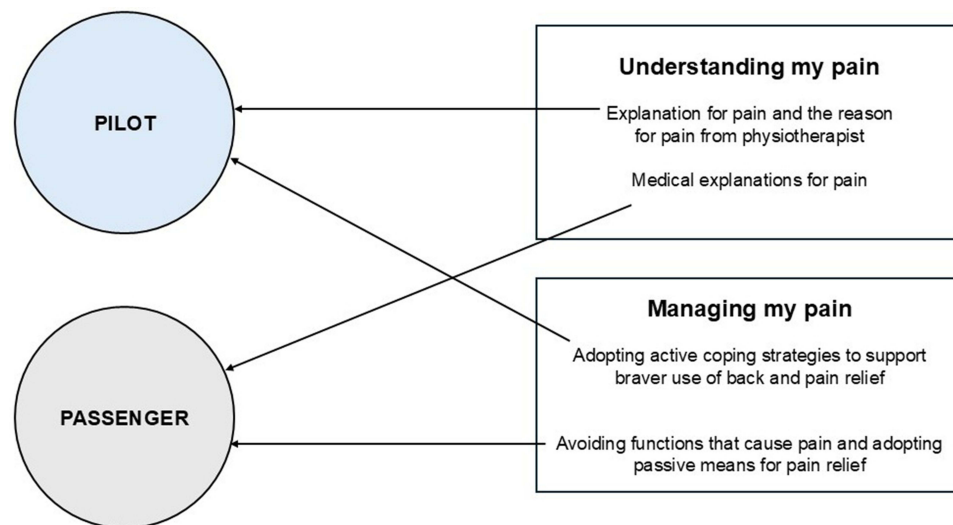


Figure 1 The client types and their manifestation in the main categories.

One client (ID196) reported a notable decrease in pain but reported remaining on sick leave due to difficulties in sitting or standing at work. Only one of the passengers was a DA client (ID171).

An old ailment that won't go away. A wrong movement or improper posture can cause the condition to worsen. You have to be careful. (ID171 at 12-month follow-up point)

Five clients (ID25, ID105, ID115, ID138, ID192) demonstrated characteristics of both identified client types at different time-points during the follow-up period, alternating between active and passive roles in their recovery. An example of this fluctuation is illustrated below.

I suppose it's good advice, but it just doesn't help with my problem. Need to examine further to see what the problem is... (ID138 at 3-month follow-up point)

I suspect that in addition to the SI joint, it might also be osteoarthritis or something else in the lower back. The exercise and the support belt help, but they haven't completely eliminated the problem. (ID138 at 6-month follow-up point)

Across both client types experiences of pain were expressed through individual narratives describing the nature of pain, daily functioning with pain, and the significance of understanding the cause of the pain. These themes are captured in the main category, "Understanding my pain", where the differences between pilots and passengers are particularly evident in the subcategory Knowing the cause of my pain. This category and its subcategories will be discussed next, supported by illustrative quotations from the data.

The subcategory Nature of my pain encompassed participants' descriptions of the onset, duration and quality of their pain. Both pilots and passengers linked the onset of pain to external factors such as slip-and-fall incidents, muscle stiffness, or specific activities like raking or farming chores.

The condition is caused by an accident at a young age which resulted in a vertebrae moving. (ID123 at 6-month follow-up point)

The data revealed varied experiences of pain duration including long-standing or chronic pain, recurrent episodes, and first-time LBP. Over the follow-up period, the quality of pain was described in three distinct ways: as a persistent companion to which one had become accustomed; as intermittent, with clients either waiting for the pain to subside or anticipating its return; and as a gradual reduction in disabling symptoms, in some cases leading to full recovery.

The subcategory Daily living with my pain reflected how LBP was experienced affecting participants' everyday functioning. Both pilots and passengers described how LBP interfered with daily tasks, such as gardening, standing, or increased movement throughout the day. Specific triggers included prolonged bending, sneezing, and structural issues. Participants attributed recurring or prolonged symptoms to factors such as insufficient exercise, muscle weakness, occupational strain, age-related changes or underlying pathologies.

The subcategory Knowing the cause of my pain emerged as a meaningful theme across the data. Understanding the origin of the pain was closely tied to the treatment experience. For some, uncertainty of the cause was linked to a lack of clarity with treatment, particularly among the passengers.

Neither cause nor treatment is known. (ID196 at 6-month follow-up point)

Conversely, having an explanation for the pain appeared to empower clients enabling them to take control of their recovery and adopt a more active pilot role. This understanding provided practical tools for self-management and increased confidence in recovery.

It alleviated the fear, because now I know what causes the pain and how to prevent it. (ID110 at 12-month follow-up point)

Uncertainty about the cause of pain was associated with physician consultations. Passengers in particular sought further explanations from physicians if pain persisted and its origin remained unclear after physical therapy. They also contacted physicians if medication was experienced ineffective, symptoms worsened, or they felt the needed imaging or sick leave. Some clients reported themselves requesting MRI scan to gain clarity or confirm the benign nature of their symptoms even when they acknowledged that imaging findings may not correlate with pain severity or duration.

Well, there's no actual fear in my opinion, so going to a physical therapist doesn't alleviate it in any way. For me, knowing that the MRI scans show that there shouldn't be any major "risk factor", such as something requiring surgery, has more of a dispelling effect on uncertainty and tension. (ID25 at baseline)

An MRI was done, and it showed some small changes, which I think explains the symptoms. So, it's some kind of nerve irritation. There's probably nothing much I can do about the changes anyway, so I'm just taking my medication and trying to keep myself moving. (ID25 at 12-month follow-up point)

As a result of the analysis, the second main category, "Managing my pain", was generated. This category was expressed through active strategies adopted by clients often related to the physical therapist's guidance or through passive approaches such as self-initiated avoidance behaviors or reliance on pain medication. The pilot clients were represented in the subcategories Ownership to own recovery and Courage to be active, while the passenger clients were characterized by "getting along with the pain" and adopting more passive means for pain relief. This second main category, and the manifestations of clients' experiences within its subcategories, are discussed next, supported by illustrative quotations from the data.

The perceived role of physical therapy in the recovery process of clients was linked to the physical therapist's examination and explanation of possible causes of pain. Individual advice and guidance were also described meaningful, particularly in relation to self-management and pain prevention. These included instructions for pain relief, ergonomic advice, strategies to improve functional capacity and flexibility, and home exercise programs. Such interventions were associated with pilot clients who described taking ownership of their recovery by actively following the physical therapist's instructions. The significance of physical therapy was also reflected in how clients valued follow-up planning and referral when necessary. Clients who received assistive devices as part of the treatment noted that these tools were meaningful in supporting recovery and daily functioning.

The physical therapist checked whether it was muscle related or something else and then asked the nurse to give me a relaxant. The relaxant didn't exactly give me relief, but I was able to stand a little straighter than before. They [the physical therapist] also gave me a back brace, which was very helpful during workdays. (ID97 at baseline)

In the data, FOM did not always manifest as literal fear, but rather as a frustration, irritation, or uncertainty about the ongoing condition. Moreover, FOM was expressed through avoidance behaviors, particularly among the passenger clients who described the significance of avoiding movements or positions perceived as potentially painful. For these clients, managing persistent LBP involved anticipating and avoiding “wrong” movements, as preparing for pain episodes in advance.

In contrast pilot clients often reported a reduction in FOM as a result in physical therapy. This was linked to trust in physical therapists’ expertise and the belief that movement, even when painful, was beneficial. Clients described physical therapist’s explanations, encouragement to remain active and guidance in exercise to be meaningful in helping them to manage pain and regain confidence in movement. This trust and increased activity were captured in the subcategory *Courage to be active*, a defining feature of the pilot client type.

The expertise of the physical therapist was reassuring and encouraging. I was convinced that moving within the limits of the pain was good for me and I acted accordingly. Between the visits, the physical activity was even better than before. (ID117 at baseline)

For passenger clients, meaningful pain management strategies included medications, injections, or support from other healthcare professionals such as osteopaths or massage therapists. These clients expressed a sense of limited benefit of physical therapy for LBP that was evident in the experience of receiving no pain relief from physical therapy or reporting little or no relief in the exercises or interventions. Those who underwent back surgery during the follow-up period often viewed surgery as their only viable path to recovery.

I’m on the waiting list for surgery for my condition, so exercise won’t be enough to fix it. (ID115 at the 6-month follow-up point)

Discussion

The aim of this study was to explore the experiences of working individuals with low back pain regarding self-management, FOM, and pain over a 12-month follow-up period after receiving DA or conventional physical therapy. By analyzing responses to open-ended questions of real-life physical therapy clients, this study deepened the understanding how working individuals perceive and manage their pain, fear and recovery. The two client types, pilot and passenger, identified along with the main categories of “Understanding my pain” and “Managing my pain” captured the diverse and individualized experiences of self-management, FOM, and LBP.

These findings align with previous research on fear of movement and chronicity,^{11–16} while offering new insights into complexity and individuality of these phenomena. The pilot client type was characterized by trust in the physical therapist’s examinations and explanations and by an active role in the recovery. In contrast the passenger client type was marked by preference of medical explanations, such as imaging, avoidance of pain-inducing activities, and reliance on passive pain relief strategies. Alternation between these roles during the follow-up period further underscores LBP as a fluctuating and individually experienced condition. Furthermore, Alt and Luomajoki⁴⁰ explored adherence to physical therapy by categorizing LBP patient types based on personality traits, activity level and locus of control suggesting that increased awareness of such typologies may support adherence and improve treatment outcomes. Even though reasons for alteration remain unclear in this study, the identified client types shed light on individual coping strategies adopted after a physical therapy visit. This study reinforces the understanding that LBP is a deeply personal experience and that self-management and FOM should be addressed individually in clinical settings.

Our findings support the idea that early-phase physical therapy may encourage clients to adopt more active recovery behaviors. Deslauriers et al¹⁷ similarly found that rapid access to physical therapy can mitigate negative outcomes at both individual and health system levels. Additionally, Andersen et al²⁰ suggest focusing treatment on restoring function instead of pain management. This supports the implementation of early intervention models that target the individual needs of clients, such as DA, which may help reduce work absences and long-term disability. Karvonen¹⁹ also emphasized the benefits of early physical therapy intervention in improving client outcomes.

Our findings are consistent with prior studies that highlight the importance of identifying FOM. Recognizing clients at risk allows physical therapists to address fear early in the treatment process potentially preventing the development of chronic pain and fear avoidance behaviors. For example, Chen et al⁴¹ found that higher pain intensity, perceived consequences, longer pain duration, and passive coping strategies along with lower social class predicted the course of LBP. Lee et al¹⁴ identified fear, psychological distress and self-efficacy as key mediators in the relationship between pain and disability. These findings underscore the importance of understanding FOM as both individually experienced and objectively measurable phenomenon, and of providing targeted education when needed.

In this study, most participants, particularly the DA clients, received only a single physical therapy session. While this approach may be sufficient for many individuals with benign MSK conditions, some individuals may require additional support. Our findings indicate that clients with persistent FOM or passive coping strategies may benefit from more frequent follow-up. André and Lundberg¹² similarly found that individuals with high levels of FOM required additional support to engage in movement and exercise, often managing their pain by carefully choosing how to move. These findings align with our observation that some clients remained in the passenger role throughout the follow-up period.

The importance of understanding the cause of the pain was emphasized by participants. However, as the origin of pain is not always identifiable, fostering awareness of one's own behavior in relation to FOM and pain may help clients adopt a more active role in self-management. Additional support from physical therapists may facilitate this shift helping clients to take ownership of their recovery and transition into the pilot role.

Future research could explore whether FOM decreases in physical therapy interventions that specifically address the meaning and mechanisms of fear avoidance behavior. It could also be valuable to investigate whether added support helps individuals adopt a pilot-like role in their recovery.

Strengths and Limitations

A key strength of this study lies in its 12-month follow-up of real-life physical therapy clients offering a rare longitudinal perspective on self-management, FOM, and pain in authentic physical therapy settings. This extended follow-up allowed for a deeper understanding of how working individuals experience and manage LBP over time. The study highlights the meaningfulness of individually targeted treatment and suggests that early physical therapy intervention along with screening for clients who may require additional support could be beneficial. Another strength is the ethical and methodological use of the full data set. By integrating the numeric data to contextualize the qualitative content analysis (QCA), the study honored the participants commitment to the research process and maximized the value of their contributions over the extended follow-up period. The findings reinforce the view that self-management, FOM, and pain are complex individually experienced phenomena that should be carefully considered in clinical practice. This understanding can inform the development of more personalized treatment approaches and risk screening tools.

However, this study also has several limitations. Due to a high drop-out rate and uneven participation between client groups, the originally intended comparison between DA and conventional physical therapy could not be pursued. The focus shifted to a qualitative exploration of those who remained engaged throughout the study. The perspectives of disengaged clients remain absent, which may limit the diversity of viewpoints represented. Additionally, delays between the initial physical therapy visit and the baseline response may have influenced participants' recollections and responses.

Participant recruitment was also affected by external factors including the global COVID-19 pandemic and the staff turnover at participating physical therapy sites. Furthermore, legislative change in 2022 expanded DA services in occupational health care potentially diverting eligible participants from public health care settings.⁴² The research team responded by organizing multiple orientation and update meetings with physical therapists and their supervisors which provided valuable insights into the recruitment challenges. Despite several extensions to the recruitment period, only fifteen participants completed all follow-ups. While this number provided sufficient depth for qualitative analysis, the findings should be interpreted as reflective of this specific group and context. Some participants who consented to the study did not respond at baseline and the reasons for non-response remain unknown. A higher initial response rate might have improved the robustness and reduced attrition. Nevertheless, the QCA was successfully conducted with the 15 participants who engaged throughout the study.

Although DA in Finland is intended for the early-stage MSK conditions, the study found that clients with chronic LBP were also treated in DA settings. This highlights the complexity of clinical realities and supports earlier findings on the importance of identifying biopsychosocial risk factors that may predict chronicity.⁴³ Riska et al⁴⁴ similarly emphasize the need to screen for psychosocial factors which are already prevalent among Finnish higher education students who experience MSK pain.

The specific content and delivery of physical therapy in both DA and conventional settings were not standardized or fully documented, which limits the ability to describe treatment processes in detail. Although national guidelines exist for DA practice in Finland,¹⁰ variation in clinical reasoning and practices among physical therapists is likely. Roine et al⁴⁵ for example, found individual-level differences in clinical reasoning. Tailoring the clinical examination to the client's needs through participatory interaction may lead to better outcomes.⁴⁶

Our findings suggest that physical therapists play a crucial role in promoting physical activity and reassuring clients about the non-threatening nature of pain. However, the results also highlight the need to educate clients about the limited value of high-cost, low-value interventions, such as imaging. Instead, meaningful recovery may be better supported through clinical examinations conducted in collaboration with the client. As Simula et al⁴ argue, current LBP care guidelines in Finland should be updated to emphasize clinical assessment and individual treatment approaches.

Conclusion

This study explored the experiences of working individuals with low back pain (LBP) over a 12-month period following either direct access or conventional physical therapy. The findings offer interpretative insights into self-management, fear of movement (FOM) and pain as individually experienced phenomena. The findings highlight the highly personal and evolving nature of these experiences and suggest that physical therapy may support individuals in engaging more actively in their recovery, as illustrated in the *pilot* typology.

Given the exploratory and longitudinal nature of the study, and the high attrition rate, the findings should be viewed as context-bound and reflective of those individuals who remained engaged throughout the follow-up. The *pilot* and *passenger* roles appeared to shift over time, suggesting that these typologies are fluid rather than fixed.

To further explore how individuals navigate everyday life with LBP, future research could focus on developing supportive approaches for those who tend to adopt a more passive stance in recovery. Such approaches might include tailored information or structured follow-ups in clinical settings to foster active engagement. Overall, this study contributes to a deeper understanding of the lived and dynamic nature of recovery from LBP and highlights the importance of individualized support in physical therapy contexts.

Acknowledgments

The authors sincerely thank all participants in this study. Special thanks to Tuulikki Sjögren, PhD, for her contribution to the original study design and Petteri Koho, PhD, for his valuable assistance with TSK-13-FIN.

Funding

This study was supported by the Finnish Work Environment Fund (grant number 240377), awarded to Minna Roine for her doctoral research. Additional financial support was provided to Minna Roine in the form of three months of paid research leave during 2024 from Helsinki University Hospital Nursing Research Center, and €500 grant from the Finnish Association of Physiotherapists. No funding sources were involved in the execution of the research project itself.

Disclosure

The authors report no conflicts of interest in this work.

References

1. Ferreira ML, De Luca K, Haile LM, et al. Global, regional, and national burden of low back pain, 1990–2020, its attributable risk factors, and projections to 2050: a systematic analysis of the Global Burden of Disease Study 2021. *Lancet Rheumatol*. 2023;5(6):e316–e329. doi:10.1016/S2665-9913(23)00098-X

2. Hartvigsen J, Hancock MJ, Kongsted A, et al. What low back pain is and why we need to pay attention. *Lancet*. 2018;391(10137):2356–2367. doi:10.1016/S0140-6736(18)30480-X
3. Buchbinder R, Underwood M, Hartvigsen J, Maher CG. The Lancet Series call to action to reduce low value care for low back pain: an update. *Pain*. 2020;161(1):S57. doi:10.1097/j.pain.0000000000001869
4. Simula AS, Malmivaara A, Booth N, Karppinen J. Effectiveness of a classification-based approach to low back pain in primary care – a benchmarking controlled trial: trust your back. *J Rehabil Med*. 2024;56:jrm28321. doi:10.2340/jrm.v56.28321
5. World Physiotherapy. Direct access and patient/client self-referral to physical therapy. 2019. Available from: <https://world.physio/sites/default/files/2020-04/PS-2019-Direct-access.pdf>. Accessed June 17, 2025.
6. Cattrysse E, Van Den Broeck J, Petroons R, Teugels A, Scafoglieri A, Van Trijffel E. Impact of direct access on the quality of primary care musculoskeletal physiotherapy: a scoping review from a patient, provider, and societal perspective. *Arch Physiother*. 2024;14:20–28. doi:10.33393/aop.2024.3023
7. Demont A, Bormaud A, Kechichian A, Desmeules F. The impact of direct access physiotherapy compared to primary care physician led usual care for patients with musculoskeletal disorders: a systematic review of the literature. *Disabil Rehabil*. 2021;43(12):1637–1648. doi:10.1080/09638288.2019.1674388
8. Gallotti M, Campagnola B, Cocchieri A, Mourad F, Heick JD, Maselli F. Effectiveness and consequences of direct access in physiotherapy: a systematic review. *J Clin Med*. 2023;12(18):5832. doi:10.3390/jcm12185832
9. Ojha HA, Snyder RS, Davenport TE. Direct access compared with referred physical therapy episodes of care: a systematic review. *Phys Ther*. 2014;94(1):14–30. doi:10.2522/ptj.20130096
10. Finnish Society of Physical and Rehabilitation Medicine and Finnish Association of Physiotherapists. Suositus fysioterapeuttien tule-suoravastaaotokoulutuksesta. 2017. Finnish. Available from: <https://www.suomenfysioterapeutit.fi/wp-content/uploads/2018/02/Suoravastaaotossuositus2017.pdf>. Accessed June 17, 2025.
11. Menezes Costa LDC, Maher CG, Hancock MJ, McAuley JH, Herbert RD, Costa LOP. The prognosis of acute and persistent low-back pain: a meta-analysis. *CMAJ*. 2012;184(11):E613–E624. doi:10.1503/cmaj.111271
12. André M, Lundberg M. Thoughts on pain, physical activity, and body in patients with recurrent low back pain and fear: an interview study. *Phys Ther*. 2022;102(2). doi:10.1093/ptj/pzab275
13. Linton S, Shaw W. Impact of psychological factors in the experience of pain. *Phys Ther*. 2011;91(5):700–711. doi:10.2522/ptj.20100330
14. Lee H, Hübscher M, Moseley GL, et al. How does pain lead to disability? A systematic review and meta-analysis of mediation studies in people with back and neck pain. *Pain*. 2015;156(6):988–997. doi:10.1097/j.pain.0000000000000146
15. Wertli MM, Rasmussen-Barr E, Weiser S, Bachmann LM, Brunner F. The role of fear avoidance beliefs as a prognostic factor for outcome in patients with nonspecific low back pain: a systematic review. *Spine J*. 2014;14(5):816–836.e4. doi:10.1016/j.spinee.2013.09.036
16. Iles RA, Davidson M, Taylor NF. Psychosocial predictors of failure to return to work in non-chronic non-specific low back pain: a systematic review. *Occup Environ Med*. 2008;65:507–517.
17. Deslauriers S, Déry J, Proulx K, et al. Effects of waiting for outpatient physiotherapy services in persons with musculoskeletal disorders: a systematic review. *Disabil Rehabil*. 2021;43(5):611–620. doi:10.1080/09638288.2019.1639222
18. Babatunde OO, Bishop A, Cottrell E, et al. A systematic review and evidence synthesis of non-medical triage, self-referral and direct access services for patients with musculoskeletal pain. *PLoS One*. 2020;15(7):e0235364. doi:10.1371/journal.pone.0235364
19. Karvonen E. Visiting a physiotherapist is useful in the early phase of low back pain. *Ann Physiother Occup Ther*. 2020;3(2). doi:10.23880/aphot-16000157
20. Andersen T, Karstoft K-I, Lauridsen H, Manniche C. Trajectories of disability in low back pain. *Pain Rep*. 2022;7(1):e985. doi:10.1097/PR9.0000000000000985
21. Kongsted A, Kent P, Axen I, Downie A, Dunn K. What have we learned from ten years of trajectory research in low back pain? *BMC Musculoskelet Disord*. 2016;17(1):220. doi:10.1186/s12891-016-1071-2
22. Buchbinder R, van Tulder M, Öberg B, et al. Low back pain: a call for action. *Lancet*. 2018;391(10137):2384–2388. doi:10.1016/S0140-6736(18)30488-4
23. Clark S, Horton R. Low back pain: a major global challenge. *Lancet*. 2018;391(10137):2302. doi:10.1016/S0140-6736(18)30725-6
24. Foster NE, Anema JR, Chérkin D, et al. Prevention and treatment of low back pain: evidence, challenges, and promising directions. *Lancet*. 2018;391(10137):2368–2383. doi:10.1016/S0140-6736(18)30489-6
25. Bury TJ, Stokes EK. Direct access and patient/client self-referral to physiotherapy: a review of contemporary practice within the European Union. *Physiotherapy*. 2013;99(4):285–291. doi:10.1016/j.physio.2012.12.011
26. Hon S, Ritter R, Allen DD. Cost-effectiveness and outcomes of direct access to physical therapy for musculoskeletal disorders compared to physician-first access in the United States: systematic review and meta-analysis. *Phys Ther*. 2021;101(1):pzaa201. doi:10.1093/ptj/pzaa201
27. Piano L, Maselli F, Viceconti A, Gianola S, Ciuro A. Direct access to physical therapy for the patient with musculoskeletal disorders, a literature review. *J Phys Ther Sci*. 2017;29(8):1463–1471. doi:10.1589/jpts.29.1463
28. Boonstra A, Stewart R, Köke A, et al. Cut-off points for mild, moderate, and severe pain on the numeric rating scale for pain in patients with chronic musculoskeletal pain: variability and influence of sex and catastrophizing. *Front Psychol*. 2016;7(1466). doi:10.3389/fpsyg.2016.01466
29. Childs JD, Piva SR, Fritz JM. Responsiveness of the numeric pain rating scale in patients with low back pain. *Spine*. 2005;30(11):1331–1334. doi:10.1097/01.brs.0000164099.92112.29
30. Ranzatto AD, Chaves TC, Martins MN, et al. Pain intensity scales: a cross-sectional study on the preferences and knowledge of physiotherapists and participants with musculoskeletal pain. *Musculoskelet Sci Pract*. 2024;73(103162). doi:10.1016/j.msksp.2024.103162
31. Cordeiro N, Pezarat-Correia P, Gil J, Cabri J. Portuguese language version of the Tampa Scale for Kinesiophobia [13 Items]. *J Musculoskelet Pain*. 2013;21. doi:10.3109/10582452.2012.762966
32. Dupuis F, Cherif A, Batcho C, Massé-Alarie H, Roy JS. The Tampa Scale of Kinesiophobia: a systematic review of its psychometric properties in people with musculoskeletal pain. *Clin J Pain*. 2023;39(5):236. doi:10.1097/AJP.0000000000001104
33. Eiger B, Errebo M, Straszek CL, Vaegter HB. Less is more: reliability and measurement error for three versions of the Tampa Scale of Kinesiophobia (TSK-11, TSK-13, and TSK-17) in patients with high-impact chronic pain. *Scand J Pain*. 2023;23(1):217–224. doi:10.1515/sjpain-2021-0200

34. Koho P, Borodulin K, Kautiainen H, Kujala U, Pohjolainen T, Hurri H. Finnish version of the Tampa Scale of Kinesiophobia: reference values in the Finnish general population and associations with leisure-time physical activity. *J Rehabil Med*. 2015;47(3):249–255. doi:10.2340/16501977-1927
35. Neblett R, Hartzell MM, Mayer TG, Bradford EM, Gatchel RJ. Establishing clinically meaningful severity levels for the Tampa Scale for Kinesiophobia (TSK-13). *Eur J Pain*. 2016;20(5):701–710. doi:10.1002/ejp.795
36. Lincoln Y, Lynham S, Guba E. Paradigmatic controversies, contradictions, and emerging confluences revisited. In: Denzin NK, Lincoln YS, Giardina MD, Cannella GS, editors. *The SAGE Handbook of Qualitative Research*. 6th ed. London: Sage Publications; 2023:75–112.
37. Schreier M. *Qualitative Content Analysis in Practice*. 1st ed. London: Sage Publications; 2012.
38. Dahlberg H, Dahlberg K. The question of meaning—A momentous issue for qualitative research. *Int J Qual Stud Health Well-Being*. 2019;14(1):1598723. doi:10.1080/17482631.2019.1598723
39. Shaw R, Hiles DR, West K, Holland C, Gwyther H. From Mixing methods to the logic(s) of inquiry: taking a fresh look at developing mixed design studies. *Health Psychol Behav Med*. 2018;6(1):226–244. doi:10.1080/21642850.2018.1515016
40. Alt A, Luomajoki H. Does adherence to physiotherapy depend on the typologies of patients with back pain and their physiotherapists? A qualitative typology study. *J Bodyw Mov Ther*. 2024;40:1224–1230. doi:10.1016/j.jbmt.2024.07.039
41. Chen Y, Campbell P, Strauss VY, Foster NE, Jordan KP, Dunn KM. Trajectories and predictors of the long-term course of low back pain: cohort study with 5-year follow-up. *Pain*. 2018;159(2):252. doi:10.1097/j.pain.0000000000001097
42. Finlex. Occupational Healthcare Act. 2021. (1383/2001; amendments up to 555/2021 included). Available from: <https://www.finlex.fi/en/laki/kaannokset/2001/en20011383.pdf>. Assessed June 17, 2025.
43. Tanguay-Sabourin C, Fillingim M, Guglietti GV, et al. A prognostic risk score for development and spread of chronic pain. *Nat Med*. 2023;29(7):1821–1831. doi:10.1038/s41591-023-02430-4
44. Riska H, Karppinen J, Heikkala E, et al. Gender-stratified analysis of psychosocial factors and physical function in higher education students with musculoskeletal pain. *Eur J Physiother*. 2024;1–7. doi:10.1080/21679169.2024.2386358
45. Roine M, Sjögren T, Korpi H, Jäppinen A-M, Karvonen E. Physiotherapists' clinical reasoning in examination of clients with low back pain in direct access practice: a theory-driven qualitative content analysis. *Eur J Physiother*. 2023;26(3):160–169. doi:10.1080/21679169.2023.2219694
46. Roine M, Jäppinen A-M, Karvonen E, Munukka M, Vuoskoski P. Physiotherapy educators' perceptions of physiotherapists' competencies and continuing education in the practice of musculoskeletal physiotherapy direct access. *Physiother Theory Pract*. 2024;1–13. doi:10.1080/09593985.2024.2394512

Journal of Pain Research

Publish your work in this journal

The Journal of Pain Research is an international, peer reviewed, open access, online journal that welcomes laboratory and clinical findings in the fields of pain research and the prevention and management of pain. Original research, reviews, symposium reports, hypothesis formation and commentaries are all considered for publication. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <https://www.dovepress.com/journal-of-pain-research-journal>

Dovepress
Taylor & Francis Group