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Interdisciplinary Cognitive-Behavioral Therapy as Part of Lumbar Spinal Fusion Surgery Rehabilitation

Experience of Patients With Chronic Low Back Pain

Pil Lindgreen ▼ Nanna Rolving ▼ Claus Vinther Nielsen ▼ Kirsten Lomborg

BACKGROUND: Patients receiving lumbar spinal fusion surgery often have persisting postoperative pain negatively affecting their daily life. These patients may be helped by interdisciplinary cognitive-behavioral therapy which is recognized as an effective intervention for improving beneficial pain coping behavior, thereby facilitating the rehabilitation process of patients with chronic pain.

PURPOSE: The purpose of this study was to describe the lived experience of patients recovering from lumbar spinal fusion surgery and to explore potential similarities and disparities in pain coping behavior between receivers and nonreceivers of interdisciplinary cognitive-behavioral group therapy.

METHODS: We conducted semistructured interviews with 10 patients; 5 receiving cognitive-behavioral therapy in connection with their lumbar spinal fusion surgery and 5 receiving usual care. We conducted a phenomenological analysis to reach our first aim and then conducted a comparative content analysis to reach our second aim.

RESULTS: Patients' postoperative experience was characterized by the need to adapt to the limitations imposed by back discomfort (coexisting with the back), need for recognition and support from others regarding their pain, a relatively long rehabilitation period during which they "awaited the result of surgery", and ambivalence toward analgesics. The patients in both groups had similar negative perception of analgesics and tended to abstain from them to avoid addiction. Coping behavior apparently differed among receivers and nonreceivers of interdisciplinary cognitive-behavioral group therapy. Receivers prevented or minimized pain by resting before pain onset, whereas nonreceivers awaited pain onset before resting.

CONCLUSION: The postoperative experience entailed ambivalence, causing uncertainty, worry and insecurity. This ambivalence was relieved when others recognized the patient's pain and offered support. Cognitive-behavioral therapy as part of rehabilitation may have encouraged beneficial pain coping behavior by altering patients' pain perception and coping behavior, thereby reducing adverse effects of pain.

Background

Chronic low back pain is one of the most common and socioeconomically costly chronic pain conditions in the Western world (Vos et al., 2012). Surgery rates have increased drastically in the past 20 years, with lumbar spinal fusion surgery (LSFS) being the most common surgical procedure performed for degenerative spinal disorders (Deyo, Gray, Kreuter, Mirza, & Martin, 2005; Harris & Dao, 2009; Neukamp et al., 2013; Rajae, Kanim, & Bae, 2014; Rasmussen, Jensen, Iversen, & Kehlet, 2009). Unfortunately, many LSFS patients experience persisting pain postoperatively (Mannion, Brox, & Fairbank, 2013; Saltychev, Eskola, & Laimi, 2014;

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Author contributions: The study was designed by Pil Lindgreen, Nanna Rolving, Kirsten Lomborg, and Claus Vinther Nielsen. Pil Lindgreen performed the data collection and analysis under the supervision of Kirsten Lomborg. Pil Lindgreen drafted the manuscript, and Nanna Rolving, Kirsten Lomborg, and Claus Vinther Nielsen revised it critically for important intellectual content. All authors approved the final version to be published.

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Supplemental digital content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's website (www.orthopaedic-nursing.com).

The authors have disclosed no conflicts of interest.

DOI: 10.1097/NOR.0000000000000259

Strömquist et al., 2013), which has a negative impact on functional ability and quality of life (Greenberg, 2012; Niv & Kreitler, 2001; Riva, Wirth, & Williams, 2011; Strunin & Boden, 2004). In LSFS and in the treatment of chronic musculoskeletal pain in general, the biopsychosocial perspective on illness and health has become increasingly accepted. In fact, psychosocial and behavioral factors have been recognized as possible determinants of treatment prognosis (Abbott, Tyni-Lenné, & Hedlund, 2010b; Burns & Moric, 2011; Engel, 1977; Moore, 2010; Waddell, 1987). Yet, studies show that patients with chronic musculoskeletal pain seldom find their psychosocial needs met during treatment and rehabilitation (Damsgaard, Jørgensen, Norlyk, Thomas, & Birkelund, 2015; Toye et al., 2013). On the contrary, patients with nonmalignant musculoskeletal pain often feel they have to prove legitimacy because they feel ashamed of having medically inexplicable pain (Toye et al., 2013). Thus, patients are urged to find the appropriate balance between expressing their pain to defend their right to treatment while concealing their pain to seem “normal” (Toye et al., 2013). Similarly, patients with back pain may feel their pain unacknowledged by the healthcare system and may consequently feel marginalized and disrespected as human beings (Damsgaard et al., 2015). These findings demonstrate that the implementation of the biopsychosocial perspective in the treatment of chronic musculoskeletal pain is still lacking.

Like the biopsychosocial model, cognitive-behavioral therapy (CBT) entails a holistic understanding of pain as a complex interaction between cognitive, behavioral, and psychosocial aspects influenced by biomedical factors (Beck, Rush, Shaw, & Emery, 1979). In the underlying theory of the cognitive-behavioral model, a person’s perception of pain is presumed to affect his/her emotional and physiological responses, thus affecting the pattern of behavior and coping (Abbott et al., 2010a, 2010b; Christensen, Laurberg, & Bünger, 2003; Dysvik, Kvaløy,

& Furnes, 2013; Waters, Campbell, Keefe, & Carson, 2004). Thus, negative perceptions can cause mental and physical stress by affecting emotions and behavior in a negative manner (Beck et al., 1979). According to the cognitive-behavioral model, negative perceptions can be divided into several categories as shown in Table 1.

Research on the impact of CBT interventions on LSFS rehabilitation has presented promising findings. However, the field is fairly new; to our knowledge only few studies have been conducted (Abbott et al., 2010a; Monticone et al., 2014; Rolving et al., 2015). Further research is needed to establish the optimal CBT-rehabilitation plan for LSFS patients (Brox et al., 2006; Fairbank et al., 2005; Henschke et al., 2011; Polomano, Marcotte, & Farrar, 2006). Intrigued by the lack of research, we conducted a qualitative study to investigate the lived experience of patients undergoing LSFS rehabilitation.

PURPOSE

We aimed to describe the lived experience of patients undergoing LSFS. Also, we wanted to explore potential similarities and disparities in pain-coping behavior between receivers and nonreceivers of interdisciplinary CBT group rehabilitation.

Methods

DESIGN

Data were collected during September–December 2013. The phenomenological analysis to describe the lived experience of patients undergoing LSFS (Dahlberg, Dahlberg, & Nyström, 2008), was conducted in January–February 2014. The secondary content analysis (Elo & Kyngäs, 2008; Heaton, 2004) conducted in March–April 2014 utilized the cognitive-behavioral model (Beck et al., 1979; Davies-Smith, 2006) as the theoretical framework

TABLE 1. AN OVERVIEW OF NEGATIVE PERCEPTIONS AS PART OF COGNITIVE BEHAVIORAL THERAPY

Negative Perception	Description	Example
Magnification	Perceiving a problem as unmanageable, even though it may not be the case.	Perceiving a future consult with a spine surgeon as an insurmountable challenge.
Minimization	Perceiving something as less important than may be the case.	Underestimating the significance of one’s effort in terms of physical rehabilitation exercises.
Emotional thinking	Experiencing negative emotions affecting one’s cognitions in a harmful way.	Something unrelated to the back results in a negative mood, which affects one’s thoughts on the back negatively.
Catastrophizing	Experiencing harmful stress due to expectations of worst case scenarios happening.	Being extremely anxious about the spine degenerating, even though it may not happen and there may not be signs of it happening.
Personalization	Perceiving something as being one’s fault, even though it is not in one’s control.	Blaming oneself for being in need of lumbar spinal fusion surgery.
Overgeneralization	Perceiving something negative as happening more often than is the case.	Experiencing always being in pain when doing physical activities, even though it may not be the case. Yet, the episodes without pain are ignored.
“All or nothing” thinking	Believing that something can only be just right or completely wrong, and nothing in-between.	Missing out on one physical exercise appointment as part of rehabilitation, thus believing that the entire physical exercise program is ruined.

Note. Data from *Cognitive Therapy of Depression*, by A. T. Beck, A. J. Rush, B. F. Shaw, and G. Emery, 1979, New York, NY: The Guilford Press.

to explore potential similarities and disparities concerning pain coping behavior between receivers and nonreceivers of CBT.

SAMPLE AND DATA COLLECTION

Participants were recruited from a randomized controlled trial ($N = 90$) testing an interdisciplinary CBT group intervention on patients undergoing LSFS. This trial investigated the effects of CBT on pain level, disability measures, return to work, and costs (Rolving et al., 2014–2015). The intervention included six sessions led by healthcare professionals (psychologist, physiotherapist, spine surgeon, social worker, occupational therapist). Additionally, a previous LSFS patient participated. The content and timing of the CBT intervention are shown in Table 2 and are described elsewhere (Rolving et al., 2014). Although using self-reported questionnaires, the deeper perspectives and experiences of patients were not explored in this study. To address this gap, the authors conducted a complementary qualitative study to gain knowledge on patients' lived experience that may be important when developing future LSFS rehabilitation strategies.

We invited 17 patients, and 10 accepted. We used a purposeful sampling technique to achieve data variety. Thus, we sampled participants of both genders within a wide age span, who were at different stages

(4–8 months postoperatively) of recovery. We sampled five patients receiving usual care and CBT, and five patients receiving only usual care (see Table 3). Patients were interviewed in their home to prevent pain exacerbation. The interviewer used a semistructured interview guide that was developed based on relevant literature suggesting important aspects of treatment (Kvale & Brinkmann, 2009) (see Supplemental Digital Content 1, available at: <http://links.lww.com/ONJ/A8>). The interview guide provided the structure for a focused interview process but allowed the interviewer to remain flexible so that unexpected topics of importance to study participants could emerge. Each interview lasted 45–90 minutes; there was a total of 197 single spaced pages of interview transcripts.

ETHICAL CONSIDERATIONS

Participants were informed of the study by letter. The information was repeated before the interview, and participants were encouraged to ask questions and express concerns. The interviewer stressed that participation was voluntary and could be withdrawn at any time without influencing treatment. Each participant signed an informed consent form. Data were anonymized and handled with confidentiality according to current legislation (The Danish Parliament, 2011; The Ministry of Health, 2010; The Ministry of Justice, 2000). Ethical

TABLE 2. THE CONTENT AND TIMING OF THE COGNITIVE BEHAVIORAL THERAPY INTERVENTION

Session and Timing	Contents
A (preoperative)	Physical and psychological reactions to stress The interaction between thoughts, feelings, physical symptoms, and behaviors What to expect from the operation and the postoperative period
B (preoperative)	The importance of physical activity in pain reduction Scheduling and pacing pleasant activities Restrictions and working posture postoperatively (ergonomics)
C (preoperative)	The interaction between thoughts, feelings, physical symptoms, and behaviors Negative thoughts and their role in maintaining a vicious circle of negativity Active and passive coping strategies
D (preoperative)	Coping with pain in relation to family, friends, and colleagues/work The experiences of a previous lumbar spinal fusion therapy patient Legislation and procedures in the authorities when on sick leave
Follow-up (3 months postoperatively)	Group reflections on how the patients have used the acquired coping strategies Restarting daily activities, hobbies, and work by the use of pacing Setting goals for the next 3 months
Follow-up (6 months postoperatively)	Group reflections on how the patients have used the acquired coping strategies Group discussion of achieving previous goals and setting new goals Coping with pain flare-ups How to return to work and cope with physical, social, and other barriers

Note. Each session had a duration of 3 hours, and the groups consisted of approximately six to eight patients. This work has been adapted from the original article "Description and Design Considerations of a Randomized Clinical Trial Investigating the Effect of a Multidisciplinary Cognitive-Behavioural Intervention for Patients Undergoing Lumbar Spinal Fusion Surgery, by N. Rolving, L. G. Oestergaard, M. V. Willert, F. B. Christensen, F. Blumensaat, C. Bünger, & C. V. Nielsen, 2014, *BMC Musculoskeletal Disorders*, 62(15), pp. 1–8. Retrieved from <http://doi.org/10.1186/1471-2474-15-62>. The original article is an open access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/2.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

TABLE 3. PARTICIPANT PROFILE

ID	Sex	Age (Year)	Months Since Surgery	CBT
11	Male	52	7	No
12	Female	27	5	No
13	Male	55	7	No
14	Male	48	4	No
15	Female	60	6	Yes
16	Female	55	7	Yes
17	Male	52	8	Yes
18	Female	61	7	Yes
19	Female	47	6	Yes
110	Male	56	8	No

Note. CBT = cognitive-behavioral theory.

approval was obtained from the National Committee on Health Research Ethics (Journal No. M-20110047).

ANALYSES

Reflective Lifeworld Research

We used the descriptive phenomenological approach of Reflective Lifeworld Research (Dahlberg et al., 2008), to explicate the tacit aspects of patients' individual lifeworld perspective and provide insight to their lived experiences in accordance with the first aim of the study. Throughout the analysis, we performed a constant dialectic movement between the whole and the parts of the transcribed interviews. This process ensured that we "bracketed" our own (pre-)understanding in order to remain open-minded and allow for unexpected meanings to appear (Dahlberg et al., 2008). In practice, the analysis consisted of four major stages; after repeated readings of the interview transcripts to attain an understanding of the whole, the transcripts were re-read and divided into meaning units. These were examined and questioned to ensure their derivation from the data and then clustered into a temporary pattern of meanings. Then, the meaning unit clusters were resynthesized to clarify the essential structure of the lived experience of LSFS (Handberg, Nielsen, & Lomborg, 2014; see Figure 1). Supplemental Digital Content 2 (available at: <http://links.lww.com/ONJ/A9>) provides examples of the analysis process for each constituent of the lived experience.

Comparative Content Analysis

Through a secondary analysis, we reprocessed and transcended our data (Heaton, 2004) with the intention of exploring our second aim, namely, potential similarities and disparities in pain coping behavior between receivers and nonreceivers of CBT. Using comparative content analysis, we applied the cognitive-behavioral model as a theoretical perspective on the data (Elo & Kyngäs, 2008), creating a matrix (see Supplemental Digital Content 3, available at: <http://links.lww.com/ONJ/A10>). The matrix helped us to systematically formulate themes to obtain a

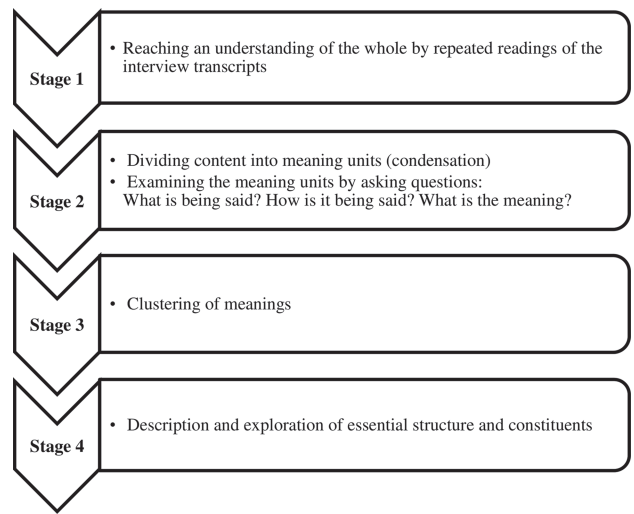


FIGURE 1. Illustration of the four stages of the first analysis. Adapted from Dahlberg et al. (2008) and Handberg et al. (2014), with permission.

better understanding of pain coping behavior. The main categories of the matrix were: pain perception, including negative perceptions; pain coping behavior; and the complex interaction between the pain coping and pain perception as in the cognitive-behavioral model highlights (Beck et al., 1979).

Results

THE LIVED EXPERIENCE

Undergoing LSFS entailed the lived experience of ambivalence, causing uncertainty, worry and insecurity. Gradually, patients came to accept and adapt to their postoperative back discomfort. Although adaptation was a relief, they found it challenging to redefine themselves as human beings setting new and more realistic goals. Patients needed recognition (of their pain) and support from others to help them manage the experience. However, they often lacked both, instead, having to justify their need of treatment. Because of the need for postoperative rehabilitation, patients had to wait several months before they found out whether the surgery was successful. During this time of waiting, they wanted to be physically active but were concerned about accidentally hurting their back. Finally, the use of analgesics was characterized by uncertainty. Patients perceived analgesics as helpful to get through the day, but often discontinued early due to the undesirable side effects and fear of addiction. Together the postoperative experience was constituted by accepting and adapting to back discomfort (coexisting with the back), being in need of recognition and support, awaiting the outcomes of surgery, and ambivalence toward analgesics. We elaborate on each constituent as follows.

Coexisting With the Back

Patients that had undergone LSFS in general, experienced less pain postoperatively but still had to learn to accept and adapt to the limitations imposed by ongoing back discomfort. They needed to learn to coexist with

their back which ultimately gave them a sense of relief. This required a positive outlook on life and enabled patients to progress postoperatively:

It's *that* [postoperative situation], you have to accept.... And then you can move on from there.... Accept, this is where *I* am.... And I also believe it's a relief when you accept that this is the way it is. (I10)

Patients considered surgery a necessary step toward accepting and living with their back problems. Surgery also gave the patients hope that they might live a better life less dominated by pain. Undergoing surgery enabled patients to set new goals for their lives. A woman who was in training for a half marathon before her back pain got unbearable said:

I would be very, very happy, if I could just run 5 kilometers again.... And now, I've been out running in the woods.... *Wow!* I never thought I'd go running in the woods again. (I9)

Although patients were pleased that they had less discomfort and more movement postoperatively, often they also had to accept that they could no longer pursue the activities with which they previously identified themselves. They had to accept functional limitations and set new goals. Letting go of former interests also meant letting go of social contacts related to these interests. These losses caused feelings of deprivation:

I can't *stand* watching others play soccer when I can't ... I always played soccer. It's what I'm *best* at.... There are those hobbies, you've had to let go, where you used to hang out with other people because of it.... That sort of went down the drain. (I2)

Being in Need of Recognition and Support

Postoperatively, patients expected support from others, for example, family, friends, colleagues, and healthcare professionals. Yet, that support was often not forthcoming. Instead, many patients felt obligated to justify the need for treatment to others as well as themselves. Having to prove legitimacy of their back pain led to feelings of being unreliable, which made patients question their right to treatment. These negative feelings hindered postoperative rehabilitation; patients felt weak and ashamed when not being able to push through the pain, and some felt guilty about the back-related socioeconomic costs:

I was *embarrassed* about having back pain. Because, everyone can just claim to have back pain ... I found it a bit embarrassing having to admit that I was actually on *sick leave* due to back pain. (I9)

I wonder if I should be ashamed of *wanting* this. It's expensive getting such a surgery. (I8)

Not receiving the expected recognition (as a patient in pain) and support from others was hurtful and made patients feel like a burden. To avoid being perceived as such, they hid the true effect of back pain on their daily

lives. Even though back pain had a major impact on their lives, patients learned to evade the subject of their back problems to avoid negatively impacting social interactions. This made patients feel rejected as human beings, as they could not partake as themselves but instead had to conceal some of their emotions and thoughts:

You do things to avoid others noticing you're in pain ... I don't say much about it. It's so tiring for other people. They stop listening at some point.... We [the family] don't really deal with how I'm doing physically and mentally ... I try being *giving* socially. (I5)

Patients' guilt about curtailing daily activities due to back pain influenced their lives and relationships by making them feel inferior compared with who they could have been, if not for their back problems:

There's been big birthday parties and weddings we [the family] have not been able to go to. We have not been able to travel ... I've always felt guilty about that.... And it affects your life, your relationships and family and you, yourself, as an individual. (I5)

The lack of recognition and support made it difficult for postoperative patients to ask for accommodation or practical assistance from others. As an example, patients meeting with social workers complained that they did not receive the anticipated help; they found it challenging having to travel to and from meetings and sitting on uncomfortable chairs in the social worker's office. These meetings left patients feeling ignored and neglected and thus not acknowledged as human beings in need:

I can't really sit in the car. The movements are bad for me.... And then they [social workers] said, "Here's a chair, sit down." I can't! They just didn't get it. They didn't know how to solve anything, and they were *extremely* rude.... It was *damn* tough on my back as well. I could have used some help instead. (I4)

Awaiting the Result of Surgery

Postoperative patients typically must attend rehabilitation therapy before they can assess the success of their LSFS. This waiting period was viewed as stressful, as it involved a fear of back deterioration. This fear was exacerbated for patients who knew someone who had LSFS that unexpectedly got worse after a period of improvement. Patients were anxious that this would happen to them too:

When he [previous patient] began his physical therapy rehabilitation, he got worse. It got *really* bad for him. So I was quite uncomfortable when I began my own rehabilitation. (I8)

This postoperative waiting period anxiety intensified any feelings of uncertainty. Patients wanted to follow the recommendations provided by the healthcare professionals to enhance recovery. Yet, they were scared of accidentally hurting their back, especially when physically active. In addition, patients found the postoperative recommendations to be unclear and open to

misinterpretation. This made patients apprehensive, unsure of what to do to optimize outcomes. As a result, patients felt a need to be reassured that their back remained unharmed. Also, they were afraid that they, themselves, would damage their back, which made them doubt their actions:

It's that uncertainty, you know, of how much you can push it.... When they're [healthcare professionals] saying, I'm not supposed to twist it [the back] then do I have to walk around like some sort of robot.... You don't want you *yourself* to be the reason shit happens to you. (I2)

Something might happen inside; in the back.... It would be nice getting an x-ray to see if it looks normal. I'd like that. (I3)

Some patients experienced intense pain postoperatively. Although the surgeon had informed them about the risk thereof, they were startled and disappointed, as they believed they had complied with the recommendations given. Furthermore, the severe postoperative pain was devastating because it diminished patients' hope for a life with less pain. Also, it made them anxious by causing worries about the quality of their future life:

I was *so* positive that it would all be all right. That it would help with some of the pain. But it hasn't, and that's disappointed me. *A lot*.... And it worries me how I'll feel in ten years. I wouldn't want not being able to walk or sit or anything as soon as I retire. (I6)

Ambivalence Toward Analgesics

Postoperatively, the use of analgesics caused ambivalence. Patients found the medication beneficial as a way of managing daily activities. However, they generally did not wish to adhere to a regular intake of analgesics as prescribed by their physician. This resistance originated from previous encounters with unpleasant side effects, for example, drowsiness and feeling mentally absent, which had the effect of making them unrecognizable to themselves. This caused insecurity:

And when I took them [pills], I slept. I slept until it was time for the next pill. Not much fun, right? (I4)

I can't handle analgesics. Those drugs.... They influenced me *way* too much.... They made me all perplexed. (I7)

I mean, it was like I was in some sort of bubble sometimes.... It was *very* upsetting. (I10)

In part, patients were opposed to analgesics due to a perception of pain as a bodily signal of something being "wrong." They wanted to respect and adhere to this warning instead of silencing it using medication, as they were scared that they could accidentally exacerbate what was already "wrong," thereby potentially harming their back. Thus, they doubted the benefits of analgesics:

When you're in pain, it's best to be able to feel *where* it's hurting, what to do, how to walk, and so on. (I1)

If you're in pain there *must* be a reason.... So I'd rather just *not* take them [analgesics]. (I2)

In retrospect, patients would have appreciated more information on analgesics preoperatively to be prepared for what to expect postoperatively, especially concerning the symptoms associated with side effects. They were not prepared for the psychological side effects, possibly occurring when phasing out the use of analgesics. This experience was overwhelming and caused uncertainty:

Side effects of morphine, painkilling. I would have preferred more [information] when I had to phase out. For instance, that it affects your mind and it *sure* did in my case ... I was surprised, it could affect me *that* much. (I3)

POTENTIAL SIMILARITIES AND DISPARITIES IN PAIN COPING BEHAVIOR

The secondary comparative content analysis provided two main themes: (1) a negative perception of analgesics leading to patients tending to minimize analgesic use in response to pain, and (2) minimizing or treating pain. The first theme was true for both receivers and nonreceivers of CBT, whereas the latter showed potential disparity between CBT receivers and nonreceivers.

A Negative Perception of Analgesics

Patients tended to have a negative perception of analgesics and as a result had poor adherence to them. They appeared unaware of which type of analgesics they were prescribed, thus not distinguishing between opioids, NSAIDs, and other drugs and their side effects, and impact on pain. Instead, patients grouped them all together as "pills":

I mean, I *hate* taking pills. I'm not good at it. (I4).

I just wanted to quit. I just didn't *want* them [pills]. (I10)

The negative perception of analgesics appeared to be influenced by a fear of addiction, which was a risk patients had been made aware of by the healthcare professionals. However, they also relied largely on their personal perception of analgesics generated by the media and stories about other patients with back pain becoming addicted. This perception appeared to play a major part in patients' recovery by making them worry about and question their own analgesic-taking behavior:

I was just about to enter a stage thinking I was taking too many [pills]. It was *bad*. When you're at home you're like "oh, I'm in so much pain," and then you just pop a pill. (I6)

The longer you use them [pills], the longer it takes to *break* the habit. The horrible thing about an operation is that people can be using them [pills] for a *long*

time after. 'Cause there's nothing *good* about it [using analgesics]. (I10)

The risk of addiction was a price patients were unwilling to pay to minimize pain. Thus, some quit their prescribed analgesics prematurely:

I had a medicine schedule right after [surgery], but fourteen days later I took a cold turkey on those pills.... It was *damned* tough. I had hot flashes for three weeks. (I7)

I *can't* do medicine *regularly* ... I've never been addicted to anything.... It's not *worth* it. (I10)

It appears that the negative perception of analgesics fed patient opposition to these drugs and in turn premature discontinuation. This interaction resembles the interaction between perception and behavior as described in the cognitive-behavioral model (Beck et al., 1979; Waters et al., 2004). Early discontinuation of analgesics may be harmful by hindering the beneficial effects (e.g., improved sleep) and reducing patients' participation in physical and social activities due to intensified pain. Thus, patients' negative perception of analgesics and its impact on their pain coping behavior may have consequences such as inadequate sleep, too little physical activity, declining functionality, and social isolation. As per cognitive-behavioral theory, this may be destructive, as it can reinforce patients' experience of pain by negatively affecting their thoughts, emotions, behavior, and physical pain (Waters et al., 2004).

Minimizing or Treating Pain

Patients reported that they planned ahead when having to perform physically demanding activities (e.g., cleaning) dividing these activities into stages separated by resting periods. Patients who had not received CBT primarily rested *after* pain onset. Those who had received CBT rested according to a time schedule, i.e., *before* the onset of pain, thereby preventing pain or keeping pain levels at a minimum. A nonreceiver of CBT expressed her frustrations regarding pain-induced rest:

Normally, I keep on going until I'm *completely* exhausted. And then you're *way* beyond where you should stop, and that's still an issue for me. Because, that thing about doing something for an hour and then having to rest for fifteen minutes.... Then there're not enough hours in the day for me. (I2)

In contrast, a receiver of CBT described how the CBT sessions taught her that it was not in her favor to push through the pain. This altered her attitude toward pain and helped her to positively change her pain coping behavior:

That's what I had to learn, which I learned at the group sessions. That I had to give myself *time*, and I had to give myself *room*.... Also, that I had to take small steps all the time. One small step, then resting. One small step, then resting. I *used* to just push through until I'd break down. (I9)

Referencing cognitive-behavioral theory (Waters et al., 2004), pain coping is benefitted when patients rest before the onset of pain. Otherwise, pain as a physical symptom may negatively affect emotions, perceptions, behavior, and other physical symptoms, possibly maintaining the individual in a negative state (Beck et al., 1979; Davies-Smith, 2006; Waters et al., 2004). It appears that the disparity between CBT receivers and nonreceivers concerning rest was persistent. Yet, one nonreceiver of CBT also exhibited conscious beneficial pain coping behavior by performing activities he had previously found useful in minimizing pain. Drawing on his experiences with behavior that triggered or reduced his pain, he had discovered how to minimize pain and its negative influences. Importantly, this did not entail physical inactivity, as this can aggravate pain, but rather the appropriate amount of physical activity:

Now I know how to do things, 'cause I've taught myself how. I know that if I don't go for my morning walk, then around noon, I can't do *anything*. (I1)

In general, pain coping behavior performed consciously to minimize pain may have a positive influence on the patients.

Discussion

FINDINGS

The lived experience of patients undergoing LSFS entailed ambivalence postoperatively. This ambivalence was caused by a process of "coexisting with the back" which required accepting and adapting to postoperative limitations imposed by back discomfort, being in need of recognition and support, awaiting the result of surgery, and ambivalence or distrust of analgesics. Negative perception of analgesics often led patients to discontinue them prematurely out of fear of side effects or addiction. Furthermore, CBT receivers attempted to minimize pain consciously by resting before its onset, whereas the CBT nonreceivers mostly rested after pain onset.

Being in Need of Recognition and Support

Patients' concerns about long- and short-term pain were relieved by recognition (of their experienced pain) and support from others. However, patients often lacked both recognition and support from those around them. Instead, they felt that they had to prove the legitimacy of their back problems. Thus, our findings correspond with previously mentioned research (Damsgaard et al., 2015; Tøye et al., 2013). We found that patients experienced this lack of support not only from the healthcare system, but also when interacting with family, friends, and colleagues. As a result, many LSFS patients felt reduced as human beings (Damsgaard et al., 2015) in several areas of life, not just within the healthcare system. This may have severe existential consequences for patients by marginalizing them in several aspects of life. Yet, the personal and work-related consequences are difficult to influence, as they are not in the same way

subjected to legislation and guidelines as is the healthcare system. Patients may benefit if fundamental changes are made in the healthcare system to expand the seemingly still dominant biomedical focus into a more holistic perspective on illness and health (Damsgaard et al., 2015). However, this appears to be a long-lasting process requiring a persistent and interdisciplinary effort from healthcare policy makers, leaders, and managers, as well as its clinicians.

A Negative Perception of Analgesics

To our knowledge, our finding of patients' negative perception of analgesics is novel. We find it important, as it drove some patients to abstain from using analgesics, risking insufficient use. From a healthcare perspective, this is harmful, as it may cause immediate discomfort and prolong hospitalization (Jensen, Dahl, Arendt-Nielsen, & Bach, 2003; Katz & Seltzer, 2009). Also, insufficient acute pain treatment postoperatively enhances the risk of developing chronic postoperative pain (Jensen et al., 2003), which may affect quality of life and cause unpleasant and costly reoperations (Frølich, 2011; Koch, Davidsen, & Juel, 2011). According to the literature, the incidence of chronic postoperative pain is 20%–50% depending on the patient's general health and the surgical procedure undertaken (Ballantyne, 2011; Ip, Abrishami, Peng, Wong, & Chung, 2009; Katz & Seltzer, 2009). Thus, we find it problematic that patients seemed to lack a deeper understanding of the beneficial aspects of analgesics and the importance of adequately treating acute postoperative pain.

Minimizing or Treating Pain

We found a disparity between the CBT receivers and non-receivers regarding pain coping behavior. This finding may be related to the CBT receivers' familiarity with the concept of pacing. In pacing, activities are divided into stages separated by resting periods before the onset of pain with the goal of resuming everyday activities with a minimum of pain (Gill & Brown, 2009; McCracken & Samuel, 2007). Successful use of pacing may increase feelings of control over pain instead of the pain controlling the patient (Gill & Brown, 2009; Nielson, Jensen, Karsdorp, & Vlaeyen, 2013). Thus, referencing the cognitive-behavioral model (Beck et al., 1979), pacing is beneficial, as it may prevent negative interactions between perceptions, emotions, and other physical symptoms and behavior.

STRENGTHS AND LIMITATIONS

We combined a descriptive phenomenological analysis and a secondary comparative content analysis, to enable us to reach our aims. We performed the two analyses separately to prevent the findings of the secondary analysis derived using a theoretical framework from influencing the findings of the first analysis. Thus, we avoided compromising the methodological guidelines of Reflective Lifeworld Research, as this approach is solely descriptive (Dahlberg et al., 2008). In addition, we evaded the potential pitfall of "seeing what we wanted to see" by constantly remaining reflective toward our preunderstanding and preliminary findings, thus seek-

ing validity. However, a limitation of the study is that the secondary analysis is based on the experiences of a small number of patients. Also, the receivers of CBT were mainly female and the nonreceivers male. According to previous research, women may benefit more from therapy in group settings than men (Ogrodniczuk, Piper, & Joyce, 2004). Hence, the gender distribution in our study might have skewed the findings in favor of the CBT intervention. Yet, we consider our findings to be relevant in enhancing healthcare professionals' understanding of the experiences of patients undergoing LSFS, especially with our novel finding concerning analgesics. As a result, we hope that our study will contribute to optimizing and individualizing rehabilitation for LSFS patients.

IMPLICATIONS FOR RESEARCH AND PRACTICE

To improve patients' feelings of recognition and support, we suggest that nurses and other healthcare professionals focus on biopsychosocial factors when executing and planning LSFS rehabilitation. This may enhance patients' rehabilitation and potentially surgical outcomes. Based on our finding on patients' ambivalence toward analgesics, we recommend that nurses and other healthcare professionals explore patients' perceptions and knowledge of analgesics and provide advice to address any misconceptions. We believe that analgesic ambivalence among LSFS patients should be further investigated, including the potential connection between ambivalence and an insufficient intake of analgesics. It may also benefit future rehabilitation planning to explore to what degree patients are ambivalent or negative toward analgesics, and whether certain factors, for example, personal characteristics, are associated with analgesic ambivalence.

Conclusion

Postoperative experience of LSFS patients was characterized by ambivalence causing uncertainty, worry, and insecurity. This was relieved by recognition (of pain) and support from others. CBT as part of rehabilitation may induce a higher level of functioning by altering pain perception and pain coping behavior, thereby reducing the adverse effects of pain. LSFS patients may benefit from patient education on the benefits and disadvantages of postoperative analgesics. However, LSFS patients' perceptions of analgesics need further investigation.

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