



Research Paper

Postoperative outcomes that matter to patients undergoing inguinal hernia repair: A qualitative study

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ARTICLE INFO

Article history:

Received 27 June 2022

Received in revised form 5 July 2022

Accepted 18 July 2022

Available online 22 July 2022

ABSTRACT

Background: The purpose was to explore which postoperative outcomes are important to patients operated for inguinal hernia to gain a better insight into the patient experience going through surgery.

Methods: A qualitative study was performed using semistructured individual interviews. Participants were all male and had undergone inguinal hernia repair. Data were analyzed with directed content analysis.

Results: Ten patients were interviewed. Identified domains were function, sensation, expectations, appearance, social aspects, and satisfaction with surgeon/staff. Preoperative functional limitations were the main motivation for seeking surgery, and postoperative functional improvement seemed to be the most important factor determining overall patient satisfaction.

Conclusion: Patients consider a wide range of factors when assessing the outcome of their inguinal hernia repair. Our results suggest that the current practice of outcome assessment of inguinal hernia repair with focus on recurrence may be too narrow and may not adequately reflect the patients' experience.

Summary: This qualitative study explored patients' perspectives on postoperative outcome after inguinal hernia repair, and the identified domains of importance were function, sensation, expectations, appearance, social aspects, and satisfaction with surgeon/staff. These results highlight that patients emphasize a wide range of elements when assessing the outcome of their inguinal hernia repair that are important to acknowledge, as current practice of outcome assessment of inguinal hernia repair may be too narrow.

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INTRODUCTION

Inguinal hernia is a condition that usually presents as a bulge in the groin due to a protrusion of intra-abdominal content through the abdominal wall [1–3]. An inguinal hernia may be asymptomatic but can also be a cause of pain and discomfort, which can significantly worsen quality of life (QoL) [4–6]. If symptomatic, an inguinal hernia may be treated by elective surgical repair [1,3,7]. Traditionally, surgeons determine postoperative outcome after inguinal hernia repair by clinical examination and by assessment of postoperative complications. Most focus is traditionally on hernia recurrence, which for research purposes is often replaced by the surrogate outcome "reoperation for hernia recurrence" [1,3,7,8]. However, evidence suggests a possible discrepancy between patients' and surgeons' perception of successful postoperative

outcome following inguinal hernia repair [9], ie, hernia recurrence and the patient-reported outcome (PRO) do not necessarily correlate. Thus, recurrence does not automatically equal a worse PRO because not all recurrences are recognized by the patients [10]. Accordingly, focusing on PRO rather than recurrence could prove beneficial to hernia researchers and may also appear more meaningful to patients [11–13]. However, to facilitate this change in an evidence-based manner, we must first determine which PROs should be measured, ie, how patients themselves describe the outcome of a successful operation. To the best of our knowledge, this has not previously been explored in detail for this population using qualitative methodology.

The aim of this study was to explore which postoperative outcomes are important to patients undergoing inguinal hernia repair. We intended to achieve this through a series of semistructured interviews aimed at understanding the patients' personal experience going through surgery, and we aimed for this to form the basis for development of a preliminary conceptual framework of PROs of inguinal hernia repair. This study is based on prior research on ventral hernia outcomes [14], which we aimed to adapt for inguinal hernia research. Ultimately,

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we intend for this study to promote a more patient-centered approach to inguinal hernia surgery.

MATERIAL AND METHODS

This study is reported according to the Consolidated criteria for REporting Qualitative research (COREQ) [15] and Standards for Quality Improvement Reporting Excellence (SQUIRE 2.0) [16]. This is a qualitative study based on phenomenology and hermeneutics using individual semistructured interviews and seeking to explore and describe the lived experience of the participants [17,18,19]. We analyzed the data with directed content analysis [20] based on concepts identified a priori from the literature and including a study on ventral hernia outcomes [14,21]. This study was approved as a quality development project by the local institutional review board (reg. no. 20000796). This study was exempt from approval from the Capital Region of Denmark Committee on Health Research Ethics (documentation available), as neither treatment intervention nor collection of biometric data was involved (reg. no. 19082721). This is in full compliance with Danish laws and international ethical standards including the Helsinki Declaration.

Participants. Patients were recruited from an outpatient clinic at a public university hospital and from a private hospital, both located in Greater Copenhagen, Denmark, in February–March 2020. All included patients had undergone primary inguinal hernia repair, and all patients were men between 18 and 75 years of age. We applied the following exclusion criteria: chronic postoperative pain syndrome (>3 months) [22]; autoimmune, endocrine, psychiatric, or malignant comorbidity; insufficient knowledge of Danish language; and physical/mental inability to participate in the interviews.

Participants were selected through purposive sampling, and we aimed to include patients from both of the 2 following groups: the immediate postoperative group (group 1), which included patients who had recently undergone inguinal hernia repair (≤ 10 days), and the late postoperative group (group 2), including patients who had undergone inguinal hernia repair within the past 3–6 months. These groups were defined according to conventional recovery intervals, eg, most patients are expected to return to normal daily activities, including work, within 10 days postoperatively (group 1) [23,24]. We aimed to include patients treated with both open and laparoscopic repair.

Patients in group 1 were identified and recruited at their preoperative consultation visit and approached face-to-face. Patients in group 2 were identified postoperatively through medical records and approached by telephone. The following reasons for nonparticipation were specified: 2 patients declined because of personal time constraints; 1 patient did not want to participate as he felt dissatisfied and frustrated with the practical circumstances during his hernia treatment and did not want further contact with the health care system; and 1 patient canceled his planned interview because of concerns about the COVID-19 pandemic [25].

Data Collection. An interview guide was drafted by the primary author (AGH) and reviewed by the secondary authors. The content of the interview guide was based on outcomes from the literature [14,21] and on the clinical experience of the author group. The interview guide was designed using open-ended primary questions. We pretested the interview guide on 1 healthy individual naive to the purpose of the study and subsequently pilot-tested it on 1 patient operated for inguinal hernia (data from the operated patient are included in the analysis). This resulted in a minor revision of the interview guide to optimize the flow and comprehensibility.

The focus of the interviews was on exploring the patients' experience going through inguinal hernia surgery, such as their thoughts, concerns, reflections, and speculations. A few global questions were also included, focusing on the patients' own opinion on postoperative outcomes and their measurement, ie, how health professionals should

determine the success or failure of an inguinal hernia operation. The series of individual semistructured interviews was conducted between March and September 2020. Interviews were conducted in Danish by the primary author (AGH) and supervised by a secondary author (JL). The study was presented to participants as a quality development project, as well as an opportunity for the participants to tell their personal story and give in-depth anonymous feedback on their treatment. Interviews were planned to last between 20 and 40 minutes. Recruitment of participants continued until data saturation was achieved. Most of the interviews were conducted face-to-face in an environment familiar to the participant (either their private home or place of work) with no third party present. However, 4 interviews were instead conducted by telephone because of infection containment measures and restrictions implemented by local authorities during the COVID-19 pandemic [25]. Interviews were audio recorded and transcribed verbatim.

Data Analysis. Data were analyzed using content analysis with a directive approach [20] based upon existing knowledge on outcome assessment of hernia surgery [14,21]. A directive content analysis is aimed at both confirming and extending theory, allowing for possible identification of original concepts [20]. The process can be outlined as follows: (1) first, data were coded according to the predetermined categories where possible; (2) then the remaining data were coded with original categories; (3) and most importantly, the coding was reviewed repeatedly to determine the need for revision and to evaluate the potential need for creation of subcategories [20].

Coding was performed by the primary author, the quality of the analysis was checked by the secondary authors, and the coding was discussed within the author group. Data collection and analysis were performed concurrently in an iterative process, allowing for constant refinement of the questioning technique and continuous identification of new categories to inform subsequent data collection and analysis. The presented quotes were translated from Danish to English for this publication.

RESULTS

In this study, 14 patients were invited to participate. Four declined (reasons for nonparticipation are listed above), and 10 patients were therefore included and interviewed. The first of these interviews were conducted as a pilot test, and this interview was included in the data analysis. The median interview length was 32 minutes (range 22–54 minutes). Characteristics of included patients are presented in Table 1. Generally, the data from the current study aligned well with the 6 predefined domains [14]: expectations, function, sensation, appearance, social aspects, and satisfaction with surgeon/staff. Domains, subdomains,

Table 1
Patient characteristics

Characteristic	n = 10
Number of patients	
Group 1	3
Group 2	7
Age at interview (median (range))	61 (44–66)
Highest level of education completed	
Less than high school	5
High school	1
University/College	4
Occupation	
Blue collar	5
White collar	5
Type of operation	
Open	2
Laparoscopy	8

Group 1: Patients who had recently undergone inguinal hernia repair (≤ 10 days). Group 2: Patients who had undergone inguinal hernia repair within the past 3–6 months.

Table 2
Identified domains and representative quotes

Domain	Subdomains	Selected representative quotes
Expectations	Expectations for the operation	Well, to me it's a relatively... Standard operation, um, not associated with any greater risks. [...] Actually, I just wanted to get it over with. It's of course nice that there is an old and proven method which solves the problem for the vast majority of people. [...] And I spoke to a couple of people who had been through surgery years ago and didn't have side effects. I was to have surgery on Tuesday and on the previous Sunday when I went to bed with my girlfriend, it was like there was a movie playing inside my head that I couldn't stop. [...] I don't know if it was a horror film, but it was a lot of "what-if" scenarios. Um, those kinds of movies that you can't really control. Um, yeah, it's probably because you don't really know what's going to happen.
	Expectations for recovery period	You do get some information... That in about 1% of patients something can happen, or it can attach to the muscle and cause chronic pain. Of course, you think about that, but it wasn't a major concern to me. I'm relatively young and healthy, I believe... And in decent shape. Um, so I didn't see it as a big risk. People say that hernias are uncomplicated, but then I Googled it and found out that some patients do experience pain... You know, chronic pain. [...] But the hernia itself didn't worry me at all, except that I found out that some percentage of patients do have long-term problems. They ask you directly. That's also what I do with my own customers. I sand floors for a living and I usually go: "You're not going to get a new floor. This floor is from 1903, and it's not going to be new again just because I fix it. It's just going to be nicer to look at". And the surgeon needs to say the same thing about what he's doing.
Sensation	Pain at rest	You know, before, it wasn't outright pain, but after the operation it was. Before, it was more like something was pinched... You know, in the groin, which bothered me. It did hurt a bit and I did feel a slight tightening sensation. I would say it stings and it's an uncomfortable tightness.
	Pain during ADL	It stings a bit, I think. It must be that kind of pain... And it went away again when I laid down, and then I could push the bulge in again, and then I didn't feel anything. But when I got up again the bulge came back, or when I had carried something heavy, then... Um, then it started to hurt more and more.
	Pain during exercise	It's like, when you've taken a shower and when I'm sitting on the "toilet-thingy" and putting on my socks, then I do feel it. I exercise and I'm in good shape and I do weightlifting and stuff like that. [...] And then the issue was that... That when I go to the gym I have this exercise where I have this ball that I have to roll over lying on my stomach, but I had to lie in a specific way so I could push the bulge back in so it wouldn't get stuck. And it hurt like hell, um, so I really couldn't live with it.
	Pain during sexual activity Mesh sensation/groin discomfort	It hasn't been a problem. It's probably more in my head? Does it hurt if I "miss the target"? I kind of thought about that. It's like I can feel that there's something in there. I know it's still new and it probably needs some time to settle down in the skin, but right now it's like a cloth or something, or when you put on a knee pad and bend your leg... You know, it's like a soft and compliant sensation. If I sit down and bent 90° in the hip then I feel like... It tightens up... Um, but of course it's down there they've been messing around, so it probably just needs some time to settle, or the body needs some time getting used to whatever "network" they've put in.
Function	Numbness	I'm a little numb around the wound, in the lower part of the wound. Um, it's like they cut some "lymphs"... Yes, they do that and some of them disappear, and then I... I'm still a little numb in the skin. But besides that, I don't have any problems. I was sure I was going to get surgery. [...] And I knew that you can get complications and that's what I have now... The skin is numb right under the wound, and that's how it is, and I can feel it gets better and better, right? [...] And I feel like that's something you have accept... And that's that.
	ADL	I had to push the bulge in several times a day... When I sat down so it didn't get stuck between the thigh and... And yes, it sounds like it's... I'm exaggerating, but when I sat down in my office chair I had to push that bubble in, and then there wasn't any problems, and when I was sleeping on my back there wasn't any problems either, because then the bulge stayed in... But if I rolled over on my side the bulge fell out immediately, and if I got up it would fall out... And that... Was annoying.
	Exercise	You know, the hernia... Um, it was this kind of lump on my left side that I had to push in almost all the time. It wasn't that big, but it bothered me a lot. I play badminton and every time I hit the ball or something... Then I had to grab the hernia and push it back in. Um, but it took almost nothing to make it pop out.
	Work	Um, yeah, I do heavy physical work and at some point, the hernia might burst, so... Um, I thought it was a pretty good idea to get it fixed.
Appearance	Sexual activity	I'm intimate with my wife regularly. I'm [age] years old and I haven't had problems getting an erection before... I've never had problems with it, and I don't have it now. Of course, right after surgery, it does take a week or so before you start to feel like doing that again, right? That's probably natural. But after that, I haven't had any problems.
	Scar appearance	I'm completely indifferent to the two scars on my stomach. I can imagine that the ladies are probably more bothered by that. I have a young wife who's [age] years younger than me, you know, so I kind of want to look good and stuff, right?
	Clothing-related issues	I wore loose underpants. It did actually bother me a little. I had some that were tighter... Some boxer briefs. But I found some that were looser.
Social aspects	Body image	They didn't cut me, they just drilled those holes, right? I think I heard that they were going to cut below my belly button, but they went right in through my belly button, and I don't think I heard anything about that... Afterwards I was like "aw", because I'm a little careful with my belly button. Like, I don't want anybody touching my belly button... It's just "ugh"... Small scars and a small operation, right? I think that, in people's head... You know, when it's just a small scar, you think it's going to heal quickly and you're going to heal quickly.
	Impact on social activities	I couldn't wear those tightfitting speedos if I was going to take a shower and there were other people there... It was stressful looking like that, and I've never seen other people just walking around with a big bubble on the side like that, and that's probably because they shower at home. And that's what I did. I started showering at home instead of at the gym, which I used to do.
Satisfaction with surgeon/staff	Impact on relatives/next of kin	It's the uncertainty that makes the entire situation worse, because then it's the spouse who has to take over the entire household. She has to do the shopping and the cleaning and the cooking, and there's a bedridden guy on the couch. All those things that I usually do, she had to do on top of the things that she usually does and still also go to work. So, of course it affects the situation, and it's tough... and again, the uncertainty.
	Interpersonal/communicational skills	That's just the way [the surgeon] is and he's been doing it for many years. It seemed like he knew exactly what he was doing, so there was no reason at all to question it. I had immediate confidence in [the surgeon]. When I spoke to him the first time, he told me that it wasn't a problem, and we were going to work it out together. I just wanted to get the anesthesia and move on... To just get it over with, but I know that... I remember being really

Table 2 (continued)

Domain	Subdomains	Selected representative quotes
		scared and nervous, but I also remember that [the surgical team] were really nice and polite, and they told me a lot of things about what was going to happen, but I don't really remember now...
	Technical skills	It went so fast and after the operation, well, I didn't feel anything. So, I drove home, and I took almost no painkillers... So it was, um, [the surgeon] was good. I'd give him an A+.

and representative quotes are listed in Table 2, and these have been visualized as a preliminary conceptual framework (Fig 1) [26–28].

Expectations: *The patients' expectations for operation and recovery are important predictors of PRO.*

Matching of expectations between patient and surgeon was a recurring theme, and this includes the expectations both for the operation itself and for the recovery period (subdomains). Meeting patients' expectations for postoperative recovery seemed to be a determining factor of the patients' self-assessed outcome. Thus, thorough preoperative matching of expectations appears to be highly important, as failing to meet the patient's expectations might negatively affect PRO. Patients described the best case postoperative scenario as a complete return to normal, meaning a return to their normal activities of daily living (ADL) without physical limitations. Some patients described how they had given thought to the risk of chronic postoperative pain, and some patients deemed this the worst case postoperative scenario. Some patients emphasized the term *chronic*, which especially seemed to alarm patients. One patient described the risk of getting a stoma as the absolute worst case scenario. However, these worst case considerations did not appear to be of major concern, as most patients had a positive outlook on recovery and expected a good postoperative outcome with return to ADL without functional limitations.

Some patients described a sense of uncertainty preoperatively, in regard to both the procedure itself and about what to expect postoperatively. Expectations naturally seemed to be highly dependent on the individual patient's surgical history and prior experience. Some patients described that they had high confidence in the effectiveness of inguinal hernia surgery. They viewed it as a routine procedure and as an old, thoroughly tested, and frequently performed method, which seemed to reassure the patients of the safety and effectiveness of the procedure.

Function: *Preoperative functional limitations and postoperative functional improvement are components of PRO.*

The patients expressed functional limitations as an important preoperative motivation for undergoing surgery. The limitations were mostly issues relating to work, physical exercise, or other ADL (subdomains). Postoperative improvement of ADL was considered very important, but the target for improvement seemed to vary from patient to patient.

Roughly speaking, white collar workers hoped for a return to exercise without limitations, and blue collar workers hoped for a return to work without limitations. Recovery time and time to return to work were also widely expressed as important factors, although these were expressed mostly in the immediate postoperative group (group 1). Many patients described how it was often necessary for them to manually reduce their hernia to relieve pain just to be able to continue whatever activity they were performing. This was described as "annoying," "bothersome," "restrictive," as well as a negative influence on their well-being (subdomain). Some patients recognized the negative impact of their preoperative physical limitations on their QoL, whereas others did not. One patient described how he could easily imagine how chronic pain could potentially have a considerable negative impact on his QoL and that he felt lucky that he did not experience this.

It is important to note that sexual dysfunction (subdomain) was not reported as an important issue by the patients in this study. However, this subdomain was preserved here because of other evidence [29], and this issue needs further evaluation.

Sensation: *Groin pain and discomfort are components of PRO.*

Pain at rest and during ADL and exercise was described by the patients (subdomains). This includes pain during toilet visits, when performing yard work, and while sleeping in certain positions, and for some patients, this resulted in functional limitations. Pain during exercise was identified by most of the patients who routinely exercised and was described as a major nuisance. Pain during sexual activity (subdomain) was not identified by any patients in the study, but this subdomain was preserved because of reasons described above. However, some patients disclosed that they had not engaged in sexual activities since undergoing surgery and was thus unable to assess this. Some patients described a foreign body sensation in the groin area postoperatively (subdomain). This sensation was described as "annoying," and 1 patient compared the sensation to wearing a knee pad on the groin. Patients in the immediate postoperative group (group 1) seemed optimistic that this sensation would decrease over time. Scar-related numbness (subdomain) was addressed by the patients who received open surgery.

Appearance: *Cosmetic appearance, body image, and clothing-related issues are components of PRO.*

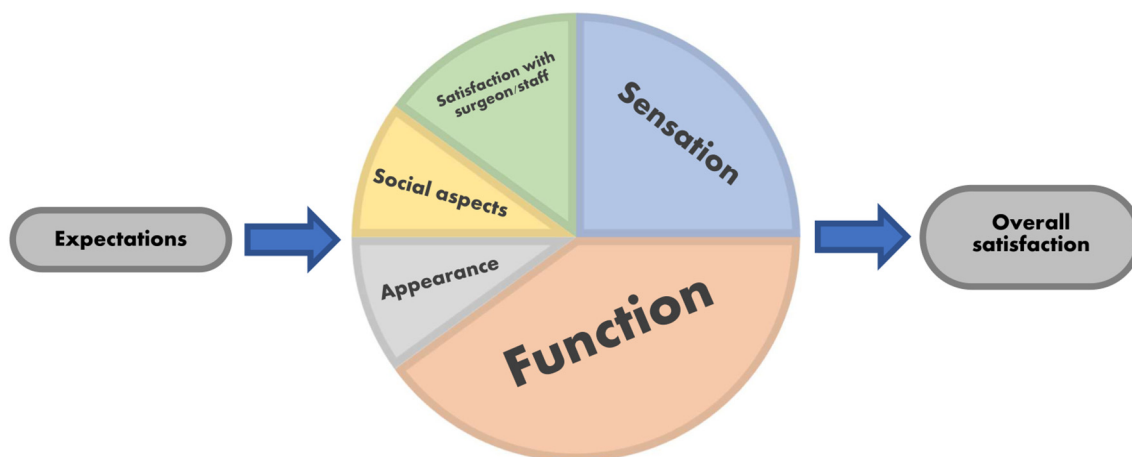


Fig 1. Preliminary conceptual framework of patient-reported outcomes. Adapted from Carney et al [14].

One patient highlighted cosmetic appearance as a motivation for getting surgery (subdomain) and emphasized his need for feeling attractive toward his partner. One patient expressed indifference toward the cosmetic appearance of the surgical scars, but he very much appreciated the smaller scars from laparoscopic surgery because of their psychological impact. The small scars gave him a positive outlook on recovery and meant that he expected to recover faster from surgery. Some patients denied that the cosmetic appearance of their hernia was a motivation for getting surgery and denied that postoperative scar appearance concerned them in any way. This was true for patients who received both open and laparoscopic repair, and some patients even suggested that they would not have minded larger scars. A few patients described the need for more loose-fitting clothes postoperatively (subdomain).

Social aspects: *Inguinal hernias have a social impact on patients, and this is a component of PRO.*

One patient described how he felt embarrassed to go to the public swimming pool and display his hernia publicly. He expressed that he felt ethically compelled to not display his "physical deformity," and consequently, he avoided public showers, ie, he reported a change of social behavior (subdomain). This patient also disclosed that his surgery solved the problem entirely and that he took no issue with his postoperative scars. Postoperative scars were generally not described as a social issue for these patients. Another patient described how he was severely affected by both postoperative pain and the side effects from opioids. He described the uncertainty he felt postoperatively and how his situation affected his partner, specifically the partner's increased responsibility of running the household as well as worrying about the patient (subdomain). Some patients believed that neither hernia nor surgery had any impact on their partners, relatives, acquaintances, or their own social behavior.

Satisfaction with surgeon/staff: *The patients' satisfaction with the surgeon and surgical staff affects the overall satisfaction and is a component of PRO.*

Generally, the patients' short-term satisfaction with their inguinal hernia repair seemed to be highly dependent on nontechnical factors, such as the communication and the interactions with the hospital staff as well as hospital waiting times. Some patients emphasized the calm demeanor of the surgeon and the welcoming manner of the surgical staff as highly important in their experience. These factors seemed to highly affect their level of overall satisfaction with the surgery (subdomain). A few patients who suffered minor postoperative complications (eg, surgical site infection) described how this did not really affect their satisfaction with the surgeon or surgical staff, and generally, the patients had high confidence and trust in the hospital staff. The few instances of dissatisfaction were mostly due to organizational circumstances. Surgeon skill was naturally also regarded as important by the patients (subdomain); however, this was harder for the patients to assess directly.

DISCUSSION

Our data fit well into the predefined domains: expectations, function, sensation, appearance, social aspects, and satisfaction with surgeon/staff. No domains or subdomains were eliminated, and no new domains or subdomains were established, and therefore, assessment of PRO following inguinal hernia repair seems to be somewhat analogous to ventral hernia repair [14]. However, minor adaptation of these domains is perhaps necessary in future research, as some of the predefined domains (eg, appearance) seemed of only minor importance in the present study, suggesting that these should perhaps be given lower priority in regard to patients with inguinal hernia.

Function emerged as a highly important domain (Fig 1), if not the most important, in terms of both the preoperative functional limitations and postoperative functional improvement. In the present study, sexual dysfunction was not identified as a significant issue, although it has

been considered important in relation to inguinal hernia repair [29]. This topic was expected to be underreported because of its sensitive nature, especially in face-to-face interview situations. Thus, it is highly probable that this issue is underestimated here, and consequently, this issue needs further evaluation. Although the present study is not aimed at quantifying the domains, it is worth noting that the domain "appearance" only appeared to be of minor importance to the patients in this study; however, our data do not warrant elimination of this domain. It could be speculated that the patients' lesser emphasis on cosmetic appearance might be due to the specific demographics of our study population (male, elderly/middle-aged). However, this is the dominant group of patients undergoing inguinal hernia repair [30]. Additionally, inguinal hernias and postoperative scars following inguinal hernia repair (open or laparoscopic) may be perceived as less of a cosmetic issue than ventral hernias because of the difference in size and location, as well as the fact that most patients in this study received laparoscopic surgery. Our data suggest that appearance could be regarded as a minor issue when determining PRO, and it could be speculated that future quantitative evaluation of the conceptual framework might result in elimination of the subdomains "body image" and "clothing-related issues."

Strengths and Limitations. Although qualitative research in surgery is gaining popularity [31], qualitative evidence in hernia research remains scarce. In this study, we provide evidence that could only have been obtained with a qualitative approach [18], which affirms the value of qualitative research in surgery, and to the best of our knowledge, this study is the first of its kind. However, this study also builds upon existing knowledge from related areas, specifically from ventral hernia research, where PROs have previously been demonstrated to be remarkably wide-ranging and much broader than current conventional outcome assessment practices [14]. Because of the qualitative nature of this study, it does not seek statistical representativeness; however, we are not aware of any discernible reason indicating that the themes identified in this study are not representative.

Data in this study were analyzed with directive content analysis, which implies inherent and unavoidable limitations. In directive content analysis, data are approached with empirically informed bias, making this process particularly vulnerable to confirmation bias on the part of the interviewer and acquiescence bias on the part of the interviewee [20]. This type of study may also be impacted by some degree of volunteer bias, as voluntary participants may be more likely to have a higher degree of psychosocial resourcefulness and may emphasize demographically specific issues [32]. Additionally, patients with a greater burden of symptoms are perhaps also more inclined to volunteer and may be prone to express unrepresentative preferences. However, we experienced a very low refusal rate; hence, the possible impact of volunteer bias on this study may be negligible. This study may also have cultural limitations, and the external validity of our results is therefore probably restricted to a Northern European population. In this study, we did not address any age- or sex-specific issues, as we included only male patients, who constitute an overwhelming majority of the inguinal hernia patient population [30]. Sex-specific differences in postoperative outcome preferences are certainly expected [33,34] but were not assessed in this study. Further research should include a larger and more diverse population and have a wider geocultural scope.

Future Perspectives. In current inguinal hernia research, there is a high degree of heterogeneity in the reporting of PROs [21,35]. In the literature, many different PROs are reported using many different methods (patient-reported outcome measures), and this inconsistency makes it particularly difficult to compare and combine results across studies [36,37]. A possible solution to this methodological problem is the establishment of a Core Outcome Set, which is a standardized minimum collection of outcomes that is recommended to report for a given population. A Core Outcome Set includes 2 basic elements: (1) what to

measure and (2) how to measure it [36,38]. This study contributes evidence for the "what to measure" element, meaning which PROs patients themselves believe to be most important. A Core Outcome Set for inguinal hernia research could potentially decrease outcome reporting bias in clinical trials, facilitate better evidence synthesis, and altogether improve the field of inguinal hernia research. This concept has been pioneered by the Core Outcome Measures in Effectiveness Trials (COMET) Initiative (<http://www.comet-initiative.org/>).

In conclusion, patients operated for inguinal hernia focus on a wide range of factors when assessing the outcome of their surgery. Our data largely fit the 6 predefined domains: expectations, sensation, function, appearance, social aspects, and satisfaction with surgeon/staff. These domains should to a varying degree be considered when assessing the outcome of an inguinal hernia repair. The patients' main motive for seeking surgical repair of their inguinal hernia was the expectation of elimination or reduction of physical limitations and pain relief. This study provides evidence to support the establishment of a Core Outcome Set for inguinal hernia research and is intended to promote patient-centered care and treatment.

Disclosures

Author Contribution. Anders Gram-Hanssen: Conceptualization, Methodology, Investigation, Formal analysis, Writing – original draft.

Jannie Laursen: Conceptualization, Methodology, Validation, Supervision, Writing – review & editing.

Dennis Zetner: Conceptualization, Methodology, Supervision, Writing – review & editing.

Jacob Rosenberg: Conceptualization, Methodology, Supervision, Writing – review & editing.

Conflict of interest. None.

Funding Source. No funding for this for this study was sought or received.

Ethics Approval. This study was approved as a quality development project by the local institutional review board (reg. no. 20000796). This study was exempt from approval from the Capital Region of Denmark Committee on Health Research Ethics (documentation available), as neither treatment intervention nor collection of biometric data was involved (reg. no. 19082721). This is in full compliance with Danish laws and international ethical standards including the Helsinki Declaration.

Informed Consent. Patients received verbal and written information on the purpose and conduct of the study and gave verbal and written informed consent for participation and publication.

Acknowledgments. We want to acknowledge the assistance provided by Dr Cecilie Bøge Paulsen, Dr Camilla Christophersen, Mr Lars Gram-Hanssen, Mr Morten Gram-Hanssen, Dr Sofie Skovbo Jensen, and Ms Malene Agnete Højland.

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