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Review article

Elderly patients' perspectives on treatment, care and rehabilitation after hip fracture: A qualitative systematic review

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Introduction

The consequences of a hip fracture can be considerable. Mortality rates of up to 10% during admission (Sanz-Reig et al., 2017) and 20–36% after 12 months (Abrahamsen et al., 2009; Mundi et al., 2014) have been documented. Between 40 and 60% of hip fracture survivors recover their pre-fracture functional level while 40–70% regain their level of independence for basic activities of daily living (Bertram et al., 2011; Dyer et al., 2016). Impaired mobility alongside reduced social independence affects quality of life (Alexiou et al., 2018; Hall et al., 2000; Peeters et al., 2016).

Several continental and national orthopaedic associations have published evidence-based recommendations for the treatment, care and rehabilitation of hip fracture patients, including recommendations on mobilization strategies, the timing of surgery, pain management, post-operative prevention, rehabilitation programmes and patient information (Chesser and Handley, 2017; Roberts et al., 2015). Patient's preferences are sparsely represented in the guidelines, even though this issue is central to evidence-based practice (Satterfield et al., 2009). Healthcare professionals' perceptions of quality of care and quality of life may also differ from patients' perceptions (Abuosi, 2015), as the former tend to focus on clinical factors whereas the latter focus on the impact on their lives (Clark, 2005). By considering patients' perspectives, care, treatment and rehabilitation can be planned and delivered based on what matters to patients.

Despite much work on hip fracture, this is the first qualitative systematic overview of research to be published regarding patients' perspectives. The aim of this review was to identify what elderly patients consider important in relation to their hip fracture.

Methods

The protocol for the review was registered exclusively with PROSPERO (ID CRD42018091981), which is accessible at www.crd.york.ac.uk/PROSPERO. Findings are reported according to the PRISMA-P Group - Preferred Reporting Items for Systematic review and Meta-Analysis Protocol guidelines (Shamseer et al., 2014).

Design

Using a qualitative approach, we strove for a reliable representation of the authors' findings; a reinterpretation of the findings was not our aim.

Search strategy

An information specialist was consulted in the design of our search strategy and the identification of databases and keywords. As recommended by the information specialist, our search strategy was based on comprehensive labels (i.e. MESH or Thesaurus) covering numerous relevant sub-themes such as patient perspective, priorities, experiences and preferences as illustrated in Table 1.

The following electronic bibliographic databases were searched by the first author (C.A.) on April 10, 2018: MEDLINE via PubMed, PsycINFO, EMBASE and CINAHL, using a block building strategy as well as searching grey literature in PsycEXTRA, OpenSIGLE and HMIC database. A pearl growing strategy was subsequently used to examine the reference lists of relevant studies, dissertations and conference abstracts.

Search terms were structured using the SPIDER framework. However, its design and evaluation aspects were deselected due to highly restricted searches. Table 1 exemplifies the search strategy for CINAHL.

A rerun of searches on March 10, 2020.

Inclusion criteria

We included qualitative research papers reporting interview studies

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of patients with hip fracture aged 65 years or older describing patients' perspectives on treatment, care and rehabilitation after hip fracture, as we wanted a truly explorative approach to patients' perspectives. We excluded studies evaluating specific interventions along with studies with a specific focus on subthemes predefined by researchers. This specification was added after protocol registration (PROSPERO) in order to focus search results. Mixed-methods studies providing interview data were included. If studies included hip fracture patients both older and younger than 65 years of age, they were included only if data were stratified by age. Likewise, studies of multiple types of fractures were included only if data concerning hip fracture patients were reported separately. Studies of patients' perspectives and the perspectives of primary caregivers or healthcare providers were included *only if* data concerning patients' perspectives were reported separately. To ensure that our examination of the patient perspective was based on current practice, only English-language studies published after 2000 were included.

Study selection

Retrieved studies were imported into Endnote (https://endnote.com/). Duplicates were removed prior to importation to the web-based reference programme Covidence (www.covidence.org). In Covidence, both reviewers (CA and BN) independently screened and identified studies meeting the inclusion criteria. Any disagreement between the reviewers concerning the eligibility of studies was resolved through dialogue to reach consensus. Studies that met the inclusion criteria were retrieved for full text analysis. The process is shown in Fig. 1.

Data extraction

Study characteristics were extracted by the first author including; bibliographic information (author, year and country), study aim, data collection methods, time and place of interview, sampling strategy, inclusion and exclusion criteria, participant characteristics and data analysis techniques (Table 2). Data on patients' perspectives were extracted by both authors as first-order constructs (participants' citations) and second-order constructs (researcher interpretation, including themes, subthemes and statements) (Toye et al., 2014).

Quality appraisal

The quality assessment was based on the Critical Appraisal Skills Programme (CASP) checklist for qualitative studies (CASP, 2003) and user guidelines as described by Butler et al. (2016) (Butler et al., 2016). In the scoring, 1 point was allocated for *Yes*, 0.5 points for *Can't tell* (unsure) and 0 points for *No*. To ensure a rigorous and fair assessment, we considered all italicized prompts listed under each question in the checklist, giving particular emphasis to Question 3 (the presence of a justification of research design), Question 7 (clear statements concerning the researchers' detailed explanations of the research to participants), and to Question 8 (the presence of in-depth description of the analysis process). No studies were excluded based on low quality, as even low-quality studies may be able to contribute to the findings (Butler et al., 2016).

All articles were assessed independently by both authors. Disagreement occurred only concerning unclear criteria fulfilment, which was discussed until consensus was reached. Data are shown in Table 2.

Analysis

Data were analysed by both authors, using content analysis. The analytical strategy included the extraction of findings from the results section of each study, in terms of citations, statements, categories and themes described by the authors of the primary-level studies. Based on the recommendations of Pearson et al. (Pearson, 2004), each finding was assigned a level of evidence according to its quality (Table 4 in Supplementary). The data extraction was initially approached in an open and exploratory fashion (inductively). The data were subsequently categorized according to similarity of meaning, as judged by both authors and grouped for final synthesis.

Results

We identified 2045 articles: CINAHL (n = 446), EMBASE (n = 1087), PubMed (n = 379), PsycINFO (n = 125) and grey literature from PsycEXTRA, OpenSIGLE and HMIC database (n = 8). A search of reference lists and abstracts of the included studies identified a single study. In total, 610 duplicates were excluded. A total of 1436 articles were retrieved and assessed for eligibility; 1326 articles were excluded after a review of their titles and abstracts, leaving 110 studies for full-text reading. Sixteen studies met the inclusion criteria in the main search and, when rerunning the search, one extra study was added (Fig. 1).

Study characteristics

Seven of the included studies were conducted in Sweden, three in the UK, two in Canada; the remaining five in Denmark, Norway, New Zealand, Australia and the USA, respectively. The studies covered data gathered at admission (Olsson et al., 2007; Toscan et al., 2013), two weeks (Jensen et al., 2017), one month (Segevall et al., 2019; Zidén et al., 2008), two to four months (Booth et al., 2012; Bruun-Olsen et al., 2018; Gesar et al., 2017; McMillan et al., 2014) or six to 12 months after discharge from hospital (Sims-Gould et al., 2017; Young and Resnick, 2009; Zidén et al., 2010). One study had a time frame from three months to 22 years after fracture (Healee et al., 2017); the remaining four studies gave no indication of the time of interviewing (Archibald, 2003; Aronsson et al., 2014; Hommel et al., 2012; Wykes et al., 2009). In total, 299 participants were interviewed, 16 adults (gender unknown), 218 females and 65 males aged 65 to 99 years (Table 2).

Various techniques were employed for data collection including: semi-structured, in-depth and telephone interviewing. The data analysis techniques appeared to be heterogeneous; the most frequently used were phenomenological approaches, content or thematic analysis.

Quality assessment

With CASP quality scores of 6.5–9.5, the quality of the studies ranged

Table 1
Example of search strategy in CINAHL.

S Sample		P Phenomenon of interest		D Design	E Evaluation	R Research type
Elderly 65 years or above (frail* or sarcopeni* or elder* or senior* or gerontolog* or geriatric* or veteran* or old* or patient*) OR (MH "Aged+" or MH "Frail Elderly" or MH "Geriatrics")	AND	Hip fracture (MH "Hip Fractures+") OR (fractured hip or hip fracture*) OR ((fracture* or broke or broken) and (hip or hips))	AND			Qualitative studies (MH "Qualitative Studies+") OR (MH "Interviews+") OR (qualitative or Interview*)

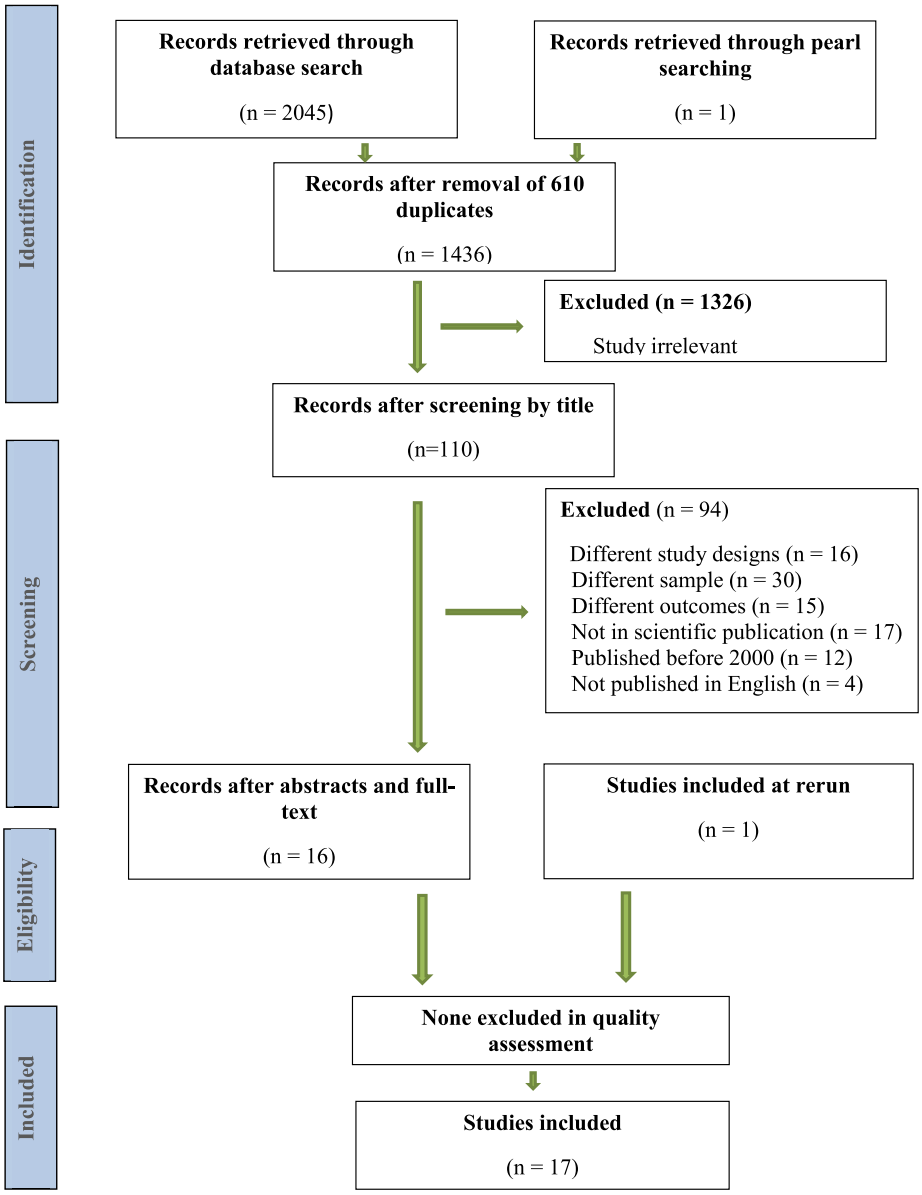

Fig. 1. PRISMA flow chart.

from low (below 7.5), to moderate (7.5–9) to high (9–10) (Butler et al., 2016). Methodological shortcomings mainly concerned the omission of considerations of the researcher–participant relationship and ethical issues (CASP Questions 6 and 7). Several studies provided no clear justification of methodological choices, in which case *Can't tell* was assigned. Details are presented in Table 3.

Level of evidence

As recommended by Pearson et al. each finding was assigned a level to indicate the quality of evidence. Three levels were used: (a) *Unequivocal* ("evidence is beyond reasonable doubt and includes findings that are factual, directly reported/observed and not open to challenge"); (b) *Credible* (evidence, while interpretative, is plausible in light of the data and theoretical framework; conclusions can be logically inferred from the data but, because the findings are essentially interpretative, these conclusions are open to challenge"); and (c) *Unsupported* ("findings are not supported by the data and none of the other level descriptors apply") (Pearson, 2004).

A total of 162 findings were reported. The majority (92) were categorized as level (a) evidence; of those, 64 were included as core themes or subthemes as defined in the studies, while 28 were included as citations. Level (b) evidence was also well represented (58), whereas level (c) evidence was relatively scarce (12). Level (a) evidence was represented in both main categories; however, the majority of level (a) (72) and level (b) (46) findings related to health-related factors. Details on findings and evidence levels are shown in Table 4 (supplementary).

What hip fracture patients find important

Based on the synthesis, findings were categorized as either *health-related factors* or *healthcare-related experiences*; health-related experiences covering experiences with healthcare (processes of care) and health-related factors covering health in relation to the hip fracture and goals for recovery. Patient perspectives on all important aspects of care, treatment and rehabilitation were unified, as it was impossible to separate them.

Health-related factors

Several studies contributed to the following subthemes; thus, health-

Table 2
Study characteristics.

Author, location and year of publication	Aim	Design/data collection method	Inclusion and exclusion criteria	Time and place of interview	Sampling strategy	Participants' characteristics -Sex -Age -Living	Data analysis techniques
Archibald, G. UK 2003 (Archibald, 2003**)**	Explore participants' experiences to gain insight into how to improve nursing care of people after hip	In-depth interviewing	Patients undergoing rehabilitation after hip fracture repair over 65 years, with subacute care needs. No cognitive impairment	Not documented	Purposeful sampling	5 participants 4 females, 1 male	Phenomenological approach
Olsson, L et al. Sweden 2007 (Olsson et al., 2007**)**	Describe patients' perception of their situation and views on own responsibilities in rehabilitation process	Interviewing	Patients aged 70 years or older, non-institutional residence and acute surgery for hip fracture. Excluded if severe illness, cognitive impairment or dementia, or pathological fracture	As soon after operation as informants felt strong enough. In patients' room or in a secluded area of ward	Strategical sampling	13 participants 11 females, 2 males Age 71–93 years (mean age 81 years)	Phenomenological approach
Zidén, L et al. Sweden 2008 (Zidén et al., 2008**)**	Explore and describe consequences of acute hip fracture as experienced by home-dwelling elderly people immediately on discharge	Semistructured interviewing	Acute hip fracture including people aged 65 or older living in own home, no cognitive impairment and able to understand and speak Swedish	1 month after discharge In their own homes	Purposeful selection	18 participants 16 female, 2 males Age 65–99 years (mean age 80.6 years)	A phenomenological method
Wykes, C et al. Australia 2009 (Wykes et al., 2009**)**	Explore impact of fractured neck of femur on independent women's lives and identify their concerns	In-depth interviewing	Inpatient rehabilitation following fractured neck of femur, aged 60–85 years, living alone and independently before injury, converse fluently in English and cognitively intact	Not documented	Recruited by a senior nurse if meeting inclusion criteria	5 participants 5 females Independent prior to hip fracture	Thematic analysis
Young, Y and Resnick, B USA. 2009 (Young and Resnick, 2009**)**	Explore perceptions of older adults about their functional recovery	In-person interviewing, using a thematic survey	Age 65 years or older with hip fracture, community-dwelling	1 year post hip fracture Place of interview not documented	Convenience sampling	62 participants 76% female Age 65–91 years 45% cohabiting	Content analysis
Zidén, L et al. Sweden 2010 (Zidén et al., 2010**)**	Explore experienced long-term consequences of a hip fracture and the conceptions of what influences recovery	Semistructured interviewing	Hip fracture, 65 years or older, community-dwelling at time of injury, no life-threatening disease or severe cognitive impairment, able to understand and speak Swedish	1 year after discharge In their own homes	Purposeful selection	15 participants 13 female, 2 males Age 66–93 years (mean age 80 years)	A phenomenological method
Booth, J et al. UK 2012 (Booth et al., 2012**)**	Explore post discharge concerns of older people after fall-induced hip fracture repair	Semistructured interviewing	Sustaining a fall-induced hip fracture, discharge within previous 3 months	Between 2 and 12 weeks after discharge In participants' own homes	Purposive sampling	19 participants 15 female, 4 males 67–89 years (mean age 79 years) 10 lived alone, 9 cohabiting	Constant comparative method
Hommel, A et al. Sweden 2012 (Hommel et al., 2012**)**	Illuminate patients' view of nursing care during hip fracture treatment	Semistructured interviewing	Hospitalized for hip fracture, proficient in Swedish, admission through new pathway, passed cognitive function test (SPMSQ)	Time of interview not documented At a separate room at hospital ward	Convenience sampling	10 participants 9 female,1 male Mean age 78 years	Content analysis
Toscan, J et al.Canada 2013 (Toscan et al., 2013**)**	Explore single hip fracture patients' experience of transitional care over	Semistructured interviewing (plus current literature and participant observation)	Being a hip fracture patient, expected to undergo multiple transitions in care, over age of 65 years	From admission to home care (4 different settings) – several	Purposive sampling	1 participant Female In her 80s Living alone	Inductive approach

(*continued on next page*)

Table 2 (*continued*)

Author, location and year of publication	Aim	Design/data collection method	Inclusion and exclusion criteria	Time and place of interview	Sampling strategy	Participants' characteristics -Sex -Age -Living	Data analysis techniques
	complete care trajectory		and proficient in written and spoken English	interviews over a period of 3.5 months			
McMillan, L et al. UK 2014 (McMillan et al., 2014**)**	Explore concerns of older people following surgical intervention for fall-induced hip fracture to enhance understanding and awareness of issues that may impact recovery and rehabilitation	Semistructured interviewing	Fall-induced hip fracture, discharge within previous 3 months	Between 2 and 3 months after discharge In participants' own homes	Purposive sampling	19 participants 15 female, 4 males Age 67–89 years (mean age 79 years) 10 lived alone, 9 cohabiting	Constant comparative method
Aronsson, K et al. Sweden 2014 (Aronsson et al., 2014**)**	Describe and interpret older patients' lived experiences of prehospital emergency care in cases of suspected hip fracture after falling	In-depth interviewing	Suspected hip fracture after falling, prehospital emergency care by ICP (age 65 years or older), private residence, no dementia or other disorientation conditions	Time of interview not documented In participants' own homes	Participants were selected in EMS electronic patient care record system for a period of three months	10 participants 7 female, 3 males Age 68–91 years (mean age 80)	Analysed for meanings
Gesar, B et al. Sweden 2017 (Gesar et al., 2017**)**	Describe adaptation to daily life of previously healthy persons 65 years or older, four months after hip fracture	Semistructured interviewing	Independent life before fracture, aged 65 years or older, previously healthy (none or mild systemic disease), no cognitive impairment, able to speak and understand Swedish	4 months after hip fracture In their homes or at a café	Sampling strategy not documented	25 participants 22 female, 3 males 17 were aged 80 years or older	Inductive content analysis
Healee, D et al. New Zealand 2017 (Healee et al., 2017**)**	Generate theory to explain recovery from hip fracture, specifically from perspective of older adults	Semistructured interviewing	Hip fracture	Hip fracture just over 3 months ago up to 22 years Place of interview not documented	Recruitment through informal networking, notices in relevant centres, intermediaries and through rehabilitation units of a local hospital	16 participants Age 70–92 years Half were in a partnership Half had co-existing health conditions	Constant comparative analysis
Jensen, CM et al. Denmark 2017 (Jensen et al., 2017**)**	Describe hip fracture patients' experiences and explore if they felt empowered and able to perform self-care in short-time hospital stay pathways (STSH)	Interviewing and telephone interviewing	Discharged to own home, independent prior to hip fracture (able to walk and perform everyday life without significant assistance from municipality), hip fracture was a fragile fracture	2 weeks after discharge and 3–5 months after primary interview Place of interview not documented	Patients with different working experience, different ages and sex.	10 participants 8 female,2 males Age 67–92 years Independent prior to hip fracture	A phenomenological approach
Sims-Gould, J et al.Canada 2017 (Sims-Gould et al., 2017**)**	Examine hip fracture patients' experiences, focusing on their perceptions of recovery period and engagement in rehabilitation	Telephone interviewing	Community-dwelling older adults aged 65 years and older with hip fracture	6 months and 12 months after hip fracture Interview location not disclosed	Participants in RCT study	50 participants 32 female, 18 male 21 living alone, 29 cohabiting	A deductive approach followed by an inductive approach
Bruun-Olsen, V et al. Norway 2018 (Bruun-Olsen et al., 2018**)**	Explore experience of recovery process in elderly hip fracture patients enrolled in ongoing RCT - issues related to experience of facilitators and barriers	Semistructured interviewing	Home-dwelling prior to hip fracture, and competent to give informed consent	3–4 months after fracture In home	Strategically according to age, sex, and participation in rehabilitation	8 participants 6 female, 2 males Age 69–91 years	Systematic text condensation
Segevall, C. et al. Sweden 2019 (Segevall et al., 2019**)**	To describe rural older people's experiences of recovering after hip fracture surgery.	Individual semistructured interviewing	Swedish speaking persons 65 years or older, who had undergone hip fracture surgery Cognitive oriented and discharged to their own home	3–5 weeks after discharge In their own homes	Purposive sampling	13 participants 7 female, 6 males Age 66–98 (median age 74) 8 living alone, 5 cohabiting	Content analysis

Table 3
Quality assessment using CASP.

Study Author Country Year	Clear statement of aim	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collection addressed research issue	Researcher-participant relationship adequately considered	Ethical issues taken into consideration	Data analysis sufficiently rigorous	Clear statement of findings	Valuable research	Score
Archibald, G. UK 2003 (Archibald, 2003**)**	Yes	Yes	Can't tell	Can't tell	Can't tell	No	Yes	Yes	Yes	Yes	7.5
Olsson, L et al. Sweden 2007 (Olsson et al., 2007**)**	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes	9.5
Zidén, L et al. Sweden 2008 (Zidén et al., 2008**)**	Yes	Yes	Can't tell	Yes	Yes	Can't tell	Yes	Yes	Yes	Can't tell	8.5
Wykes, C et al. Australia 2009 (Wykes et al., 2009**)**	Yes	Yes	Yes	Yes	Yes	Yes	no	Yes	Yes	Yes	9.0
Young, Y and Resnick, B USA 2009 (Young and Resnick, 2009**)**	Yes	Yes	Can't tell	Can't tell	Yes	Can't tell	no	Yes	Yes	Can't tell	7.0
Zidén, L et al. Sweden 2010 (Zidén et al., 2010**)**	Yes	Yes	Can't tell	Yes	Yes	Can't tell	Can't tell	Yes	Yes	Can't tell	8.0
Booth, J et al. UK 2012 (Booth et al., 2012**)**	Yes	Yes	Can't tell	Yes	Yes	No	Can't tell	Yes	Yes	Yes	8.0
Hommel, A et al. Sweden 2012 (Hommel et al., 2012**)**	Yes	Yes	Can't tell	Yes	Yes	Can't tell	Yes	Can't tell	Yes	Can't tell	8.0
Toscan, J et al. Canada 2013 (Toscan et al., 2013**)**	Yes	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	9.5
McMillan, L et al. UK 2014 (McMillan et al., 2014**)**	Yes	Yes	Yes	Yes	Yes	no	Can't tell	Yes	Yes	Yes	8.5
Aronsson, K et al. Sweden 2014 (Aronsson et al., 2014**)**	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes	Yes	9.5
Gesar, B et al. Sweden 2017 (Gesar et al., 2017)	Yes	Yes	Can't tell	Can't tell	Yes	no	Yes	Can't tell	Yes	Yes	7.5
Healee, D et al. New Zealand 2017 (Healee et al., 2017**)**	Yes	Yes	Yes	Can't tell	Can't tell	no	Can't tell	Can't tell	Yes	Can't tell	6.5
Jensen, CM et al. Denmark	Yes	Yes	Yes	Yes	Yes	Can't tell	Can't tell	Can't tell	Yes	Can't tell	8.0

(*continued on next page*)

Table 3 (*continued*)

Study Author Country Year	Clear statement of aim	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collection addressed research issue	Researcher-participant relationship adequately considered	Ethical issues taken into consideration	Data analysis sufficiently rigorous	Clear statement of findings	Valuable research	Score
2017 (Jensen et al., 2017)											
Sims-Gould, J et al. Canada 2017 (Sims-Gould et al., 2017)	Yes	Yes	Can't tell	Can't tell	Yes	no	Can't tell	Can't tell	Yes	Can't tell	6.5
Bruun-Olsen, V et al. Norway 2018 (Bruun-Olsen et al., 2018)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Can't tell	9.5
Segevall, C. et al. Sweden 2019 (Segevall et al., 2019)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	9

related factors included; 1) symptoms and complications (n = 12), 2) physical health (n = 11), 3) mental health (n = 15) and 4) social relationships (n = 13) and 5) personal goals (n = 11). For further details, see table 4 (supplementary)

Symptoms and complications. Mentioned in several studies (Archibald, 2003; Aronsson et al., 2014; Booth et al., 2012; Hommel et al., 2012; Olsson et al., 2007; Segevall et al., 2019; Sims-Gould et al., 2017; Young and Resnick, 2009; Zidén et al., 2008, 2010), pain provided the core theme of two studies (Archibald, 2003; Hommel et al., 2012). Pain occurred immediately after the injury (Archibald, 2003; Segevall et al., 2019) and, for some, continued to be a problem 6–12 months after the injury (Sims-Gould et al., 2017; Young and Resnick, 2009; Zidén et al., 2008). Patients described their pain in various ways; e.g. as intense or stabbing, in the hip, radiating towards the groin, numbness of the leg (Hommel et al., 2012); however, the pain was typically described simply as extreme and intense. Patients perceived the hip pain to be worst during movement; when they laid still, the pain disappeared except initially in the hospital stay when it was constant (Hommel et al., 2012). Pain was cited as one of the main reasons for avoiding exercise, thus hindering recovery.

Unexpected postoperative medical or surgical complications were among the other symptoms and complications mentioned by patients as major barriers to recovery (Sims-Gould et al., 2017; Young and Resnick, 2009). Complications also included hallucinating, sleeping problems, constipation, a lack of appetite and low blood count (Aronsson et al., 2014; Hommel et al., 2012), fatigue and tiredness (Gesar et al., 2017; Sims-Gould et al., 2017; Zidén et al., 2008, 2010) and subsequent falls (Young and Resnick, 2009).

When addressing leg-specific symptoms and complications, swelling (Hommel et al., 2012), stiffness (Zidén et al., 2008), reduced leg length (Gesar et al., 2017) and problems with balance, strength and speed were pinpointed (Gesar et al., 2017; Sims-Gould et al., 2017; Zidén et al., 2010). The patients saw these factors, or pre-existing health issues, combined with hip fracture as impediments to recovery (Wykes et al., 2009; Young and Resnick, 2009).

Physical health. The patients' mobility was reduced, and they felt restricted by both the fracture and the physical symptoms and complications listed above (Archibald, 2003; Gesar et al., 2017; Hommel et al., 2012; Segevall et al., 2019; Zidén et al., 2008, 2010).

Patients were asked to start walking the day after surgery (Segevall et al., 2019). However, mobilization was found to be particularly difficult and harrowing during the first few days (Hommel et al., 2012). Everyday functions that had earlier been taken for granted, such as getting out of bed, showering and walking freely, had suddenly become difficult (Segevall et al., 2019). The patients were thus wary of performing common daily activities such as using a low armchair, - worrying that they might not be able to rise from it - or cleaning, doing the laundry, shopping, going for a walk outdoors, driving a car or using public transportation (Gesar et al., 2017; Wykes et al., 2009; Zidén et al., 2008). Overall, the unreliability of their body and their sense of fragility left them feeling vulnerable (Archibald, 2003; Booth et al., 2012; Bruun-Olsen et al., 2018; McMillan et al., 2014; Olsson et al., 2007; Zidén et al., 2008).

For some patients, the physical consequences of the hip fracture persevered for 12 months after the injury (Zidén et al., 2010).

Mental health. Patients described the hip fracture as a shocking, or even life-shattering event that had put their life on hold (Bruun-Olsen et al., 2018; Gesar et al., 2017; Olsson et al., 2007; Segevall et al., 2019; Zidén et al., 2008). They addressed their new situation very differently; some were able to stay active or seek others' help in trying to remain in control of their life, while others felt resignation, hesitant and unable to actively take control and plan for the future (Booth et al., 2012; Gesar et al., 2017; McMillan et al., 2014; Olsson et al., 2007; Sims-Gould et al., 2017; Wykes et al., 2009; Zidén et al., 2008). Regaining control was perceived to be crucial to recovery.

Physical limitations caused insecurity, confidence loss and mistrust of own physical ability. Many reported worries about falling again (Archibald, 2003; Booth et al., 2012; Gesar et al., 2017; Hommel et al., 2012; McMillan et al., 2014; Segevall et al., 2019; Zidén et al., 2008, 2010). They were also anxious about relapse (Booth et al., 2012) and treatment (Aronsson et al., 2014), adverse events and overmedication (Hommel et al., 2012). Concern was also expressed about further complications (Wykes et al., 2009), their future ability to walk (Olsson et al., 2007), dependency (McMillan et al., 2014; Olsson et al., 2007; Wykes et al., 2009), the discharge and return to the home (Hommel et al., 2012; Jensen et al., 2017; McMillan et al., 2014; Olsson et al., 2007) and the future in general (Bruun-Olsen et al., 2018; Wykes et al., 2009; Zidén et al., 2008).

Some patients' mood was negatively affected by the changed life

situation brought about by the limitations in agility and their increased insecurity and fear (Zidén et al., 2010). They felt a sense of meaninglessness and had lost hope for the future (Zidén et al., 2008, 2010). Some reported being depressed (Bruun-Olsen et al., 2018) or losing "the spark of life" (Zidén et al., 2008, 2010).

Other patients described that they had adopted a humble approach to life; valuing their everyday life and things they used to take for granted (Segevall et al., 2019).

Patients saw it as essential to maintain a positive attitude and engage fully in the recommended rehabilitation activities (Jensen et al., 2017; Segevall et al., 2019; Young and Resnick, 2009). The hip fracture would not stop them from getting back to living their previous active lives (Segevall et al., 2019).

Social relationships. After hip fracture, patients spoke of a more restricted everyday life and being prevented from performing normal activities, such as cooking, washing, cleaning, shopping and gardening, which caused periodic feelings of dependence on others (Archibald, 2003; Segevall et al., 2019; Zidén et al., 2008) For those living with a spouse or other family members, family was described as being instrumental for support with daily activities and encouragement to engage in rehabilitative exercises (Segevall et al., 2019; Sims-Gould et al., 2017). Many singles enjoyed support from neighbours (Hommel et al., 2012). Some spoke of their belief that their recovery process had been facilitated by others' actions (Bruun-Olsen et al., 2018; Young and Resnick, 2009). Yet, they found it difficult to balance their needs and expectations for help and not burdening their family (Booth et al., 2012; Gesar et al., 2017; Healee et al., 2017; Hommel et al., 2012; Wykes et al., 2009; Zidén et al., 2010).

As they became housebound, the physical limitations had led to an isolated everyday life for some patients (Archibald, 2003; Gesar et al., 2017; Zidén et al., 2008, 2010), and the lack of energy made them abstain from inviting or visiting neighbours and friends (Gesar et al., 2017). Overall, their life had suffered from the diminished social contact (Zidén et al., 2010).

Personal goals. The patients' goals included returning home, regaining independence, getting well and being able to walk again. These goals were perceived useful to facilitate the recovery process (Young and Resnick, 2009). Hip fracture patients, regardless of health status or ability, expressed a strong desire to recuperate (Olsson et al., 2007; Zidén et al., 2010). However, patients admitted from and returning to their own homes were especially determined to regain their independence (Archibald, 2003; Booth et al., 2012; Bruun-Olsen et al., 2018; Gesar et al., 2017; Jensen et al., 2017; Segevall et al., 2019; Young and Resnick, 2009) and return to normality (Booth et al., 2012; Bruun-Olsen et al., 2018; Healee et al., 2017; McMillan et al., 2014).

Patients described a need for information on what to expect, including time to recover and train and to keep on fighting to achieve their goals (Bruun-Olsen et al., 2018; Gesar et al., 2017; Jensen et al., 2017). Some said that unrealistic expectations would increase the risk of disappointment and dissatisfaction (Sims-Gould et al., 2017).

Most patients expected a return to life as it was before the injury, although some spoke of having to gradually lower their expectations and adjust to life with disability (Healee et al., 2017; Zidén et al., 2008, 2010).

Healthcare-related experiences

Several studies mention patients' experiences in relation to waiting time (Hommel et al., 2012), information (Aronsson et al., 2014; Booth et al., 2012; Hommel et al., 2012; Jensen et al., 2017; McMillan et al., 2014; Olsson et al., 2007; Segevall et al., 2019; Sims-Gould et al., 2017; Toscan et al., 2013; Wykes et al., 2009; Zidén et al., 2010), participation and respect (Aronsson et al., 2014; Healee et al., 2017; Jensen et al., 2017; Toscan et al., 2013) and discharge (Hommel et al., 2012; Jensen et al., 2017; Olsson et al., 2007; Segevall et al., 2019; Toscan et al., 2013; Wykes et al., 2009; Young and Resnick, 2009).

Waiting time. Waiting times was a core theme of one study, which reported that elderly patients with hip fracture found the waiting time for surgery protracted and stressful. It is noted, however, that when it was time for surgery, many patients still did not feel mentally prepared because they felt that "everything happened very quickly" (Hommel et al., 2012).

Information. Ten studies indicated as especially important various aspects of information, such as the need for it (Olsson et al., 2007; Wykes et al., 2009), the lack of it (Aronsson et al., 2014; Segevall et al., 2019; Sims-Gould et al., 2017) as well as information content (Hommel et al., 2012; Jensen et al., 2017; McMillan et al., 2014; Olsson et al., 2007; Toscan et al., 2013; Wykes et al., 2009; Zidén et al., 2010) and method (McMillan et al., 2014; Segevall et al., 2019).

Patients indicated their interest in information on a range of issues, such as hip fracture (Hommel et al., 2012; McMillan et al., 2014; Olsson et al., 2007), surgery (Hommel et al., 2012), current and potential complications (Hommel et al., 2012; Wykes et al., 2009), rehabilitation and training (Hommel et al., 2012; Olsson et al., 2007; Zidén et al., 2010), care decisions (Toscan et al., 2013) and discharge (Jensen et al., 2017). Being informed also covered feedback, advice or reassurance from healthcare professionals regarding progress (McMillan et al., 2014). Overall, there was a strong desire to be able to know what to expect during the course of care and treatment (Jensen et al., 2017; Segevall et al., 2019).

However, hip fracture patients differed in their conceptions of their need for information (Olsson et al., 2007; Segevall et al., 2019). Some were aware of the importance of information and requested it. Others appreciated and were grateful for any information offered, but made no requests for elaboration, although they seemed to want this (Olsson et al., 2007). The causes of their reluctance are unknown, although the authors conjecture this could stem from not knowing what to ask about (Sims-Gould et al., 2017). Others showed no interest in receiving or discussing potentially useful information (Olsson et al., 2007) or did not have the strength to read the extensive information (Segevall et al., 2019).

Patients frequently reported the need for more information about their condition, about what to do and how to act (Booth et al., 2012; Olsson et al., 2007; Segevall et al., 2019; Wykes et al., 2009). Among the oldest persons, many were made to feel cognitively floundering, disempowered, a lack of confidence and anxious about their capabilities as a result of not being informed or not recalling being informed or being unable to understand the information provided (Booth et al., 2012). Others felt disappointed when they found the information contradictory (Segevall et al., 2019). Yet, some patients were satisfied with the given information and experienced its calming effect (Hommel et al., 2012).

Overall, patients expressed a wish for sufficient information at the right time (Segevall et al., 2019; Zidén et al., 2010), mentioning, for exmaple, a wish for. verbal and written information, weekly information sessions on the ward about hip fracture, and that it be provided by various sources, and employing different modes (Hommel et al., 2012; Segevall et al., 2019).

Participation and respect. Four of the included studies referred to participation and involvement as important issues. Participation was requested with regard to processes during hospitalization and discharge planning (Jensen et al., 2017) and in relation to own healthcare (Toscan et al., 2013). Overall, many patients perceived their participation as lacking (Aronsson et al., 2014; Jensen et al., 2017; Toscan et al., 2013). The younger among the patients, and those living independently prior to the hip fracture, were more likely to insist on being involved (Healee et al., 2017). The patients' sense of well-being and feeling included

appeared to depend on dialogue and their experience of empathy (Aronsson et al., 2014). One informant expressed her humiliation at not being treated humanely (Jensen et al., 2017).

Discharge. Some patients felt grateful returning to home (Segevall et al., 2019), but several felt insecure or even anticipated discharge with anxiety (Hommel et al., 2012; Jensen et al., 2017; Olsson et al., 2007; Wykes et al., 2009). In a study in which being "ready or not" was a core theme, an informant vividly described the rushed nature of her discharge and her feeling of being unprepared (Toscan et al., 2013).

Some patients described their need for minor or major adjustments to their homes including moving furniture, removing rugs or making a second shower (Segevall et al., 2019). Patients also described receiving aids including the walking aids they needed (Segevall et al., 2019). When meeting with a discharge planning team from the municipality, some patients found it difficult to know what help they would need after discharge (Segevall et al., 2019).

Patients' sense of insecurity was aggravated by limited information about the pathway and what to expect after discharge. This left them unable to imagine their situation on returning home (Jensen et al., 2017). There was a widespread desire to be involved in discharge plans (Jensen et al., 2017).

Discussion

This review reports patient perspectives that were collected from a time immediately following hip fracture to weeks, months or even years later. Despite the diversity of types of healthcare settings and location across the world, including in-hospital and rehabilitation trajectories, we identified several shared themes of importance to hip fracture patients.

Using an open and explorative approach, the themes were categorized as either 1) health-related factors or 2) healthcare-related experiences.

Health-related factors

Hip fracture patients were found to prioritize health-related factors including;1) symptoms and complications, 2) physical health, 3) mental health and 4) social relationships and 5) personal goals. All five domains were strongly represented by the themes and sub-themes of the primary studies. In total, 72 level (a)and 46 level (b) findings were related to Health-related factors.

We found that hip fracture patients focus primarily on regaining physical functioning, mobility and independence. The physical symptoms and complications, pre-existing health issues, combined with hip fracture, cause patients to feel restricted in their ability to move, thus hindering recovery. This leads to physical immobility and dependency on others. Another important factor affecting recovery is the patient's mental condition; while some are able to retain a hopeful attitude and overcome obstacles, others lose hope and manage recovery less well. Patients' ability to "take control" and handle their fear of falling and anxiety about the future are crucial to recovery. Recovery is facilitated also by social support, whether from a spouse, family, friends or neighbours, as they help with daily activities and encourage engagement with rehabilitation exercises. Recovery, likewise, depends on the individual's expectations and personal goals, such as preferred activities in future everyday life and whether returning to normality or independence is a primary goal.

Our findings corroborate those of a previous study, which found that hip fracture patients' evaluation of their recovery emphasizes factors such as pain and leg-shortening outcomes, mobility, mental well-being, fear of falling, the ability to perform day-to-day activities, self-care and level of independence. Griffith et al. (2015) have recommended that fracture be viewed in the context of age-related decline and that its impact cannot be disentangled from the impact of other health issues . Furthermore, that recovery is influenced by the patients' pre-fracture state and their ability to adapt during recovery. It appears that age, pre-fracture conditions and personal goals are conditions of life that should be recognized as important in hip fracture patients' recovery (Griffiths et al., 2015).

The diversity of factors that hip fracture patients find important calls for individualized approaches and solutions according to the patient's physical, mental and social conditions, as well as their different expectations and goals. Staff and significant others play a substantial role in rehabilitation (Rasmussen and Uhrenfeldt, 2016). Sensitivity to the patient's experience of worries and obstacles is vital in healthcare professionals' support of older people who strive to recover after hip fracture. By encouraging the patients to plan and set goals based on their own wishes for the future, healthcare professionals can further support the patient in regaining functional ability and independence (Rasmussen and Uhrenfeldt, 2016).

Healthcare-related experiences

Experiences in relation to healthcare concern several aspects, including access and waiting times, confidence and trust in health professionals, information and communication, involvement in treatment decisions, availability of staff, being treated with dignity and respect, food, physical environments and overall satisfaction (Coulter et al., 2009). These aspects relate to patients' experiences and to the *process* of care. In our review, we established that patients typically report that waiting times, information, being treated with respect, participation and respect and discharge are four aspects that are generally recognized as important. Hip fracture patients are, however, particularly preoccupied with experiences in relation to discharge.

Strength and limitations

This systematic review was based on a review protocol and was conducted independently by two researchers with no preferences towards its findings. It nonetheless entails the same potential weaknesses as similar reviews, including uncertainty whether all relevant articles were retrieved. However, the consultation of information specialist expertise supports the thoroughness and adequacy of our search.

The quality assessment conducted at the findings level (unequivocal, credible and unsupported) is also considered a strength of the study.

In the included studies, patients' perspectives were gathered at different time-points from immediately after the hip fracture until weeks, months and even years after. No distinction of time was made in this review as the time period varied substantially both within and between studies and furthermore, some studies lacked an indication of time for interviews. However, patients' perspectives may change over time and further studies on hip fracture patients' perspectives over time are recommended.

Conclusion

This systematic review provides an overview of hip fracture patients' perspectives on important aspects of care, treatment and rehabilitation during their trajectory, thereby contributing to plan and deliver care based on what matters to patients. Above all, hip fracture patients give priority to regaining physical functioning, mobility and independence. Their social network, a surplus of mental resources and the reduction of pain and complications are vital. They concede that recovery likewise depends on their commitment to realizing their own expectations and personal goals.

Ethical statement

This is a systematic review, and ethical approval was not required.

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Declaration of competing interest

The authors declare that they have no competing of interests.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ijotn.2020.100811.

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