TITLE: Older Adults' Perceptions of Early Rehabilitation and Recovery after Hip Fracture Surgery - A UK Qualitative Study

RUNNING HEAD: Perceptions of Rehabilitation after Hip Fracture

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Implications for rehabilitation

- Hip fracture was perceived as a potential tipping point in the loss of independence, contributing to the wider disruption of advancing age and co-existing conditions.

-Participants expressed uncertainty over their ability to recover their previous identity in the absence of professional support and/or social capital.

- Healthcare professionals need to educate and empower older adults to take charge of their own recovery.

-For successful implementation of the UK standards for acute physiotherapy, there is a need to contextualize goal setting to empower patients to define a fresh narrative of self.

ABSTRACT

Purpose:

To explore older adult's perceptions of early rehabilitation and recovery after hip fracture, as a complement to the UK standards for acute physiotherapy after hip fracture.

Methods:

In-depth semi-structured interviews with 15 adults aged 60 years or more in hospital after hip fracture surgery. A thematic analysis approach with interpretation informed by Bury's Biographical Disruption theoretical framework.

Results:

Participants voiced the importance of self-determination, professional support, meaningful feedback, and social capital after hip fracture. Collaborative working with staff was required for meeting the UK standards. Participants voiced anxieties about their hip fracture when considered in conjunction with their age and co-existing conditions, anticipating a disruption to their previous

physical and social activities. This new, more dependent, life situation was not acceptable to participants.

Conclusions:

This study suggests hip fracture alone, was not perceived as a biographical disruption by older adults although it is presented as a potential tipping point in the loss of independence, contributing to the wider disruption of advancing age and co-existing conditions. For successful implementation of the UK standards, goal setting should consider patients in the wider context of their advancing age and co-existing conditions to empower them to define a fresh narrative of self.

INTRODUCTION

Hip fracture is one of the most detrimental events in the lives of older adults, with 30% mortality in the first year.[1] Among survivors, 25% of patients do not regain the ability to walk again, and 22% transition from independent living to nursing homes.[1] Further, many older adults fear admission to institutionalised care [2], and one-third develop new-onset depressive symptoms.[3]

Rehabilitation "*assists individuals who experience disability to achieve and maintain optimal functioning in interaction with their environment*".[4] Yet the most effective rehabilitation after hip fracture remains unclear.[5-12] In 2018, the UK Chartered Society of Physiotherapy launched seven standards for physiotherapy after hip fracture following the results of a national audit which indicated marked variation in the delivery of hip fracture rehabilitation among older adults.[13,14] The first four standards relate to rehabilitation in the acute hospital setting with a focus on starting rehabilitation on the day of or day after surgery, the frequency and duration of rehabilitation in the first seven days and in the subsequent weeks until they have achieved their goals.[13,14]

The extent to which the UK Chartered Society of Physiotherapy standards reflect older adult perceptions of early rehabilitation and recovery is unknown. Indeed, in the last 10 years, a number

of qualitative studies suggested uncertainty related to the most effective rehabilitation approach. [15-26] This uncertainty was due in part to a lack of understanding of lay perspectives of factors contributing to recovery after hip fracture.[15-26] Themes related to loss of function, adapting to a new functional level, increased perceived dependence, as well as engagement with resources (e.g. staff, community based physical and social activities) for recovery, and goal setting, and a need for self-determination were reported by participants across studies. [15,17-25] However, the majority of these studies focused on lay perspectives in the early post discharge period (< 4months)[15,18-22,25] or at longer term follow-up (4 months – 8 years post fracture [17,18,20,21,23,24] which may not relate to the standards for rehabilitation in the acute hospital setting, detailed above.

These previous studies of older adults' perceptions of recovery after hip fracture indicate a disruption to existing functional abilities, the need to adapt to potential increasing dependence on others, and changes in how older adults and the wider society perceive their identity.[15,18,19] These findings are in keeping with the theoretical framework of biographical disruption, first described by Bury in 1982 [27]. Bury proposed this framework as a means of understanding how chronic illness disrupts the structures and routines of an individual's everyday life and their need to reconstruct a fresh narrative of self [27]. More recently, application of this theoretical framework has been useful in better understanding the impact and process of adjusting to traumatic events such as spinal cord injury,[28] traumatic brain injury,[29] and myocardial infarction[30]. It therefore provides a potentially useful lens to understand the experience of hip fracture as a traumatic event in older adults' everyday lives, and how they adjust to the impact in the early stages of recovery and rehabilitation following surgery.

Biographical disruption has yet to be applied to hip fracture surgery or recovery. However, several of the above qualitative studies highlighted the detrimental psychological effects of hip fracture among older adults. For example, in the study by Langford et al, nearly two thirds of potential

participants declined to take part in their qualitative study of rehabilitation after hip fracture reporting, *"a feeling of being overwhelmed from hospitalization"* as the main reason for not taking part.[15] Similar feelings were voiced by participants in the qualitative studies of rehabilitation after hip fracture by McMillan et al[19] where participants described the acute phase as "*going under"* and Bruun-Olsen et al[18] where participants spoke about early feelings of gloominess and hopelessness after hip fracture. Two Swedish studies explored older adults' perceptions of their capacity to recover in the immediate postoperative phase after hip fracture surgery.[16,26] Gesar et al found the majority of participants were anxious about the future, anticipating a new life situation but with an uncertain level of independence.[26] This was mirrored by a more recent study by Asplin et al where participants reported feeling vulnerable and helpless with staff not recognising their basic needs in the initial postoperative period.[16] These studies allude to the need for individuals to attempt to make sense, and adapt to, the long-standing consequences of hip fracture by mobilising psychosocial or material resources e.g. money, equipment.[31]

The physical consequences of hip fracture may lead to changes in perspectives related to anticipated new life circumstances as a result of the fracture event and surgery as part of wider changes in the individual's life. This may be particularly evident in the early postfracture stage where the greatest perceived physical disruption is likely to be apparent. This could influence goal setting during rehabilitation and therefore directly impact the implementation of the new UK standards for acute physiotherapy after hip fracture. The purpose of this study was to explore older adult's perceptions of rehabilitation and recovery after hip fracture in the immediate postoperative phase, as a complement to the new UK standards for acute physiotherapy after hip fracture.

MATERIALS AND METHODS

This qualitative study was reported in adherence with the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist.[32] This study received institutional ethical approval (REC reference: 17/NE/0179).

Study design

Theoretical framework

We used a qualitative design to organize data on older adults' perceptions of early rehabilitation and recovery after hip fracture into a structured format.

Participant selection

We used criterion sampling with surgery after hip fracture as the primary criterion.[33] We included adults aged 60 years or more who underwent surgical management of hip fracture to reflect a similar patient group to those captured by the national audit. We included those who were mobile (with/without assistive device) prefracture as rehabilitation differs for those who were not mobile prefracture. Finally, we included those who were English speaking due to feasibility of employing a translator to facilitate interviews, and able to provide informed consent (Abbreviated Mental Test Score (AMTS) of at least 8/10) as a criterion for ethical approval. Where a participant was eligible for inclusion, the physiotherapist responsible for their acute care informed the potential participant about the study and obtained signed informed consent.

Setting

Data were collected for each participant by JS in a one-to-one semi-structured interview in a private consultation room on a hospital ward. All participants underwent surgery for hip fracture within 10 days prior to data collection and were current inpatients in an inner London acute hospital ward setting at the time of interview.

Data collection

Data to describe the sample, including age, sex, prefracture residence, prefracture New Mobility Score, American Society of Anesthesiologists (ASA) Grade, fracture type, surgical procedure, time since surgery, and length of stay were retrieved from participant charts. The New Mobility Score is a composite score of an individuals' prefracture ability to perform: indoor walking, outdoor walking

and shopping, resulting in a total score from 0 to 9, with 9 indicating a high prefracture functional level.[34] The ASA Grade is a subjective report of overall health.[35] Participants were asked three open ended questions (starting rehabilitation, rehabilitation activities, benefits and challenges of rehabilitation for recovery) and predefined prompts during a semi-structured interview (table 1). JS used predefined neutral prompts such as 'tell me more', 'what did you think of that?' or 'how did that make you feel?' to encourage participants to openly convey their viewpoints. Interviews were audio recorded and transcribed verbatim.

[insert table 1 here]

Data analysis

Data were analyzed on completion of 10 interviews, and then a further 5 interviews (n = 15), after which data saturation was perceived to be reached with no new relevant themes from the qualitative data being generated. We used a thematic analysis approach to analyze and organize themes grounded in the qualitative data.[36] The transcripts were first read several times by two researchers (JS, KS) to enable familiarization with the data. Data were analyzed by one researcher (KS) using a constant comparative approach, in which similarities and differences in perspectives among participants were made, looking for patterns and exceptions in emerging themes within the data.[37] The analysis was informed both deductively by information drawn from the study aim and inductively as new themes emerged from the data. Two authors completed double coding on three transcripts (DW) which were then discussed and compared for consistency of coding. Following this, three authors (KS, DW, ES) discussed the final themes and codes and how they relate to the four UK physiotherapy standards for acute rehabilitation after hip fracture while drawing on Bury's biographical disruption theoretical framework to aid interpretation. [27] All analysis was completed using NVivo (Version 11).

Research team and reflexivity

Personal characteristics

JS is a medical student. CP is a clinical specialist orthopaedic trauma physiotherapist. DW is a qualitative sociologist. ES is a physiotherapist and social scientist working in applied health and implementation science research, with expertise in qualitative research methods. KS is a physiotherapist and health services researcher with expertise in hip fracture health services research.

Relationship with participants

CP recruited participants for the study and was directly involved in the management of patient care. JS, DW, ES and KS were not involved in patient care nor employed at the care setting. JS conducted the semi-structured interviews with the participants. ES and KS designed the topic guide, trained JS in semi-structured interview techniques, and provided feedback to JS on transcripts from early interviews. DW and KS completed the analysis of the data with guidance from ES.

CP, ES, and KS are physiotherapists with an interest in hip fracture rehabilitation research. At the time of interviews and analysis, our preconceptions were shaped by the importance and availability of social capital in terms of access to informal social support from family and friends shaping their potential to achieve their goals during rehabilitation following hip fracture surgery (ES),[7] the benefits of functional training (CP),[38] and proposed need for a stratified approach to rehabilitation to accommodate the heterogeneous nature of the underlying population (KS).[39] These preconceptions were withheld from JS who performed the data collection. During analysis DW, KS, and ES critically discussed the interpretation of interviewee statements with reference to preconceptions until a consensus on interpretation was reached.

RESULTS

Participant characteristics

Fifteen participants were interviewed during their hospital stay following hip fracture surgery with an average of 8.2 days [standard deviation (SD):3.8] after surgery. The duration of interviews ranged from 20minutes to 57minutes [mean (SD): 37minutes (10minutes)]. The characteristics of participants taking part in this interview study are presented in table 2.

[insert table 2 here]

Themes

We identified five themes related to the study aim: importance of self-determination, reliance on professional support, importance of meaningful feedback, anxiety about the future, and reliance on social capital (Figure 1).

[insert Figure 1 here]

Importance of self-determination

The first two UK Chartered Society of Physiotherapy standards for acute physiotherapy rehabilitation after hip fracture relate to physiotherapy assessment and mobilisation on the day of or the day following surgery. Most participants (n=9) spoke about the importance of a positive outlook in dealing with the initial challenge of beginning rehabilitation early on after their surgery.

> *Once you move your legs, then it takes you an indefinite period to get your muscles back, so the quicker you get out of bed, the better*. [P10,86-year-old man living at home with family]
>
> *I thought I was going to be very well looked after and recover very quickly, because I could walk.* [P1, 81-year-old man living at home with partner]

For a perceived successful start to rehabilitation, 11 participants spoke of the importance of a self-determination for their early recovery. Self-determination required a positive sense of control over their rehabilitation through maintaining autonomy for certain components such as feeling competent

to control their recovery and progress, and working collaborative with healthcare professionals to ensure that their progress was in keeping with their expectations for their stage of recovery:

> *It's the only way of getting through that barrier, is pushing. Physios can't help you doing that, you've got to do that yourself.* [P15,84-year-old woman living at home alone]
>
> *I was ready, because I knew in the state I was in that I couldn't live as I am. I've got to move. I've got to do everything they tell me to do*. [P13, 82-year-old woman living at home with partner]

Several participants reported that a sense of control over their rehabilitation improved feelings of well-being as this was perceived as an early indicator of their potential to regain independence and reduce future dependence on others.

> *I don't want to depend on other people really. It's just me*. [P5, 82-year-old woman living at home alone]
>
> *I was pleased that I did it because when I'm on my own I've got to do it.* [P15, 84-year-old woman living at home alone]

Accounts of self-determination presents hip fracture surgery, recovery and rehabilitation as a temporary disruption to normal life, something that a number of participants perceived they could overcome through active engagement with rehabilitation.

Reliance on professional support

Over two-thirds of participants voiced strong reliance on professionals and their support to determine and improve their abilities and expectations for recovery, set rehabilitation parameters, determine how often they felt they should be mobilizing and exercising after their surgery, and in terms of motivation to continue with their rehabilitation.

> *At the moment they wouldn't let me do anything on my own, they know if you're not ready for it*. [P10,86-year-old man living at home with family]
>
> *I did as much as they realised I could do on the day…. I done as much as I was told to do*. [P13, 82-year-old woman living at home with partner]

I wanted somebody to give me directions, and what to do for the exercise. I can't just do an exercise by myself. [P7, 78-year-old man living at home alone]

This reliance on professional advice and viewpoints regarding their perceived abilities for rehabilitation and recovery was not restricted to allied health professionals but extended to other professionals' perspectives such as nurses and care aides on their potential improvements in mobility and activities of daily living outside of formal rehabilitation sessions.

Once during the night, I had to go to the toilet. They said 'walk'. During the night! [P1, 81-year-old man living at home with partner]

I wouldn't consider doing anything without asking first. I mean it's like breaking their rules. [P2, 71-year-old man living at home alone]

The third and fourth UK standards for acute physiotherapy after hip fracture specify a minimum of two hours of physiotherapy in the first seven days (standard 3) and subsequent weeks until patient goals have been achieved (standard 4). In the current study, participants reported a desire for more rehabilitation to support their recovery, however, most (n=9) felt that they had difficulty accessing staff for this support.

Well I could do with more to be honest … more physio [P14, 72-year-old woman living at home alone]

Professional expertise and direction were not always viewed as an integral part of rehabilitation and recovery for all older adults.

He [physiotherapist] said we want to get rid of that Zimmer frame now and give you crutches. Id only been a day on the Zimmer frame ... And then he took it! And then that night I was saying to the nurse I want that back. I just knew that I was too early for crutches and I took my own advantage and I said bring it [Zimmer frame] back please. Bring it back or I can't move around, and she brought it back. [P2,71-year-old man living at home alone]

At the point of initiating rehabilitation, five participants reported negative experiences of starting rehabilitation after their operation.

I was a bit cross …, it was the next morning ……. I said shouldn't have done it so quickly …… I was terrified. I was so scared. I just got up and they helped me up and then I had to try walk and they left me alone and I thought aargh …. My brain stopped thinking it was just horrible. [P2,71-year-old man living at home alone]

I thought it was too soon….in myself I thought you can't do it. [P5,82-year-old woman living at home alone]

Many participants perceived they would recover the same sense of self they held before their fracture. There was an acknowledgement of a need for support from professionals with experience of rehabilitation and recovery after fracture to overcome the disruption presented by the trauma. Participants were concerned when the support did not meet their perceived expectation of a quantity required to recover.

Importance of meaningful feedback

The most frequently participant reported factor (n=7) deemed beneficial for recovery was regular feedback on progress during rehabilitation. Such participants largely indicated that feedback was predominantly from staff members but also came from other patients, informal carers, and from themselves.

I felt great, I thought, I can do it! I felt wonderful, I thought oh my god, I know I have pain, but I can do it. And then everyone was cheering me on in the ward. So that made me feel better, and I thought I had some support from the other patients. [P14, 72-year-old woman living at home alone]

Participants indicated feedback received from staff, patients, and informal carers needed to tie in with their own beliefs about how their recovery was progressing and what was perceived to be beneficial for their recovery. For example, one female participant voiced:

I've tried and I know I'm not doing too badly if they [physiotherapists] are telling me the truth. And I think what is helping me is ego boosting me. [P15, 84-year-old woman living at home alone]

Where there was a mismatch between older adults' perceptions and staff perceptions of their progress with rehabilitation and recovery, the benefits of feedback were lost. In particular, no benefit was obtained when staff provided generic feedback that was not specific to a given older adult.

> *I think a lot of people think that if you're old then you've lost your understanding*. [P13, 82-year-old woman living at home with partner]
>
> *He [physiotherapist] just presumes that I'm going to do what he says, that all it is presumption, he lives in presumption, he truly does which for an instructor he really shouldn't do*. [P2, 71-year-old man living at home alone]

In their journey to recovery, participants required encouragement in the form of meaningful feedback from multiple sources. It was essential this feedback matched the participants expectation both in terms of their recovery progress and perceived potential for recovery. Where there was a mismatch, for example, an underestimation of their own perception of their recovery progress, it was to the detriment of the participants ability to perceive their return to the same sense of self they had before their fracture.

Anxiety about the future

The fourth UK Chartered Society of Physiotherapy standard for acute physiotherapy rehabilitation states 'All patients receive at least two hours of rehabilitation in subsequent weeks [subsequent to the first post-surgical week] post-surgery until they have achieved their goals'. Participants in the current study reported an anticipated period of recovery from 4-5 days [P12], to a few weeks [P6, P7, P8, P9], a month [P14], or a couple of months [P13, P15]. Perceived anticipated duration of recovery differentially shaped participant goal setting -a key component of this fourth standard. Participants who anticipated a short period of recovery projected their goals to the near future with the most frequently reported goal to return home (n = 5) and to return to previous activities (n = 3) – relying on professional opinion about their readiness to achieve these goals.

Getting back out there, living back out there in the wild. [P9, 79-year-old man living at home alone]

If I feel I'm comfortable enough to walk on my own, then I'll go as soon as they let me go. [P8, 91-year-old man living at home alone]

The goal of discharge from hospital to home may reflect patients' unwillingness to set longer-terms goals in the face of uncertainty over their perceived potential for recovery. Indeed, most participants reported anxiety about their ability to cope at home, their potential for recovery, and uncertainty over their future level of dependence. For these participants, consideration of their hip fracture in conjunction with advancing age and co-existing conditions led to anxieties about their potential for rehabilitation and recovery. For these participants, the potential for successful recovery was often linked to optimal management of their co-existing health conditions.

They keep telling me that, the more I do, the better I'm gonna be at it. But I think at the age I am it's not gonna be that easy you know? I'm hoping I'm wrong. [P5, 82-year-old woman living at home alone]

My health was getting my body back into order, and then I could start thinking about my feet and legs. [P2, 71-year-old man living at home alone]

Without appropriate management of co-existing conditions, participants reported anxiety about longer term disruption to their previous physical and social activities, reduced life expectancy, and fears of death. For several participants there was a lack of acceptance of the potential for a new, more dependent, life situation.

There are times where you're so low that, well, I had doubts, I could not see that I would get my life back again. [P11, 89-year-old man living at home alone]

However, a number of participants were willing to acknowledge a change in their potential for physical and social activities if a degree of independence was preserved and death could be avoided.

I don't mind if I can't do a lot more than I did before…. If it doesn't get any worse. I know I can't be around forever, I'd like to, but. [P5, 82-year-old woman living at home alone]

I don't want to die; I want to keep going for as long as I can [P13, 82-year-old woman living at home with partner]

Participants set short-term goals which reflected their hip fracture as a temporary disruption to their previous understanding of their identity. When considering the longer term, there was an acknowledgement from participants of the potential challenges in overcoming their fracture when considered in the wider context of their age and health. Participants accepted the potential need to construct a new narrative of self in this context only if a degree of independence was maintained.

Reliance on social capital

Where available, the ability to access social capital in terms of informal social support from family and friends mitigated anxiety among several participants about the future. These participants indicated they would continue with the physical and social activities they had in place before their fracture, albeit at a reduced level of engagement. They were willing to accept the need for social support to continue these activities.

It's quite good down there [local social club], I eat down there 3 days a week…we have bingo on Monday, Thursday and Friday. I've got one stick at the moment but they [physiotherapists] said I'd probably have to have two. It's one of those things you do and get used to doing, and at the end you do it automatically. [P8, 91-year-old man living at home alone]

I've got neighbours, people that go shopping …. I gave her my card and everything, she drew my pension and paid my rent … So they are going to help a lot they reckon, they said they can do a lot. [P12, 78-year-old man living at home alone]

However, for several participants, the preservation of some level of independence was important to avoid too heavy a perceived future reliance on friends and family members for support with daily activities.

I was worried my health was going to get worse and worse, and I didn't want that because I

didn't want to put anyone out. [P5, 82-year-old woman living at home alone]

For some older adults who lived alone, the impact of their hip fracture was perceived as a greater disruption to their ability to conduct the activities they had in place before their fracture. Such participants reported an anticipated reduction in their capacity to engage in functional and social activities following their hip fracture. There was also an acknowledgement of the need for social support to generate a new way of living and reports of concern related to coping on their own with a level of dependence in the absence of available social support through informal networks.

Nobody's living with me, all the help I've been having in the hospital will stop….I won't be able to move about by myself with the walker without someone bringing me the walker…and to get to bed I need somebody to help me in lifting my left leg up to the bed, and there's nobody living with me…. and like, when I want to use the toilet, yet I cannot go to now, I won't be able to stand up to walk to get to the bottles to use for my urine. [P7, 78-year-old man living at home alone]

'I want to be able to go to the church, and do my shopping. But right now I cannot do that. I'm not ready to give my credit card and my debit card to the carers to do my shopping for me.' [P7, 78-year-old man living at home alone]

Participants identified social capital as pivotal for their rehabilitation, recovery, and where needed, in defining a new sense of self for the future. There was an acceptance of a heavier reliance on others only when a degree of independence was considered possible for their future. Where there was uncertainty over accessing social capital, participants struggled to construct a narrative for their future identity, and were more anxious about their ability to cope.

DISCUSSION

The purpose of this study was to explore older adult's perspectives of recovery and rehabilitation after hip fracture in the immediate postoperative phase, as a complement to the UK standards for acute physiotherapy after hip fracture. Hip fracture was perceived as a potential tipping point in the

loss of independence, contributing to the wider disruption of advancing age and co-existing conditions. Participants expressed uncertainty over their ability to recovery their previous identify in the absence of professional support and/or social capital. This study suggests, for successful implementation of the UK standards for acute physiotherapy, there is a need to contextualize goal setting to empower patients to define a fresh narrative of self.

The extent to which hip fracture was perceived as a disruption among older adults in the current study was influenced by their perceptions of the expected duration of the recovery period following their hip fracture surgery. Most participants adopted an overall positive outlook in the context of an anticipated short recovery period (days to weeks). Some voiced concern over their ability to return to their previous daily activities in the short term in the absence of social support.

Our results corroborate those of Gesar et al's whereby older adults perceived anxiety and uncertainty about their future recovery after hip fracture only when considered in conjunction with factors such as advancing age, co-existing conditions, and absence of social support.[26] Other studies have highlighted how a healthcare event reinforces an existing identity and sense of self as opposed to disrupting it [40]or, in the case of elderly stroke survivors, that their experience of stroke is viewed within the context of ageing, as opposed to a disrupting event [41]. Like Pound et al, concerns over longer term disruption to participants' ability to return home and to their previous daily activities were only voiced when considered in the context of their age and co-existing conditions; hip fracture alone was not sufficient to disrupt the individual's everyday life and present a need to reconstruct a fresh narrative of self in the studied population [41]. Hip fracture was, however, considered a tipping factor leading to increased dependence among older adults with co-existing conditions. This led to a need for a revised understanding of how older adults and the wider society perceive their identity.

Existing uses of biographical disruption as an explanatory tool, some noted above, highlight nuances of how patient perceptions and experiences plays out in different illness contexts. For hip

fracture, there is a need to contextualize goals for rehabilitation to facilitate a greater awareness of the potential challenges for recovery for the patient, their carers, and healthcare professionals. Early identification of concerns among older adults following hip fracture surgery regarding their perceived recovery in light of access to available appropriate social support, advancing age, and other co-existing health conditions could enable a more tailored approach, greater empowerment of the patient in their recovery process as they move towards a revised understanding of their identity, and improved adherence to longer-term rehabilitation.

This study was developed to complement the UK standards for acute physiotherapy after hip fracture with older adults' perspectives of recovery in the immediate postoperative phase.[13,14] Standards related to rehabilitation in the hospital setting focus on starting rehabilitation on the day of or day after surgery and adequate frequency and duration of rehabilitation until goals have been achieved. [13,14] Our findings indicate these standards align to some extent with older adult's goals and perceptions of early rehabilitation after hip fracture surgery required to meet these goals. Indeed, most participants indicated a desire to return home early and to return to previous daily activities. Initiating rehabilitation early (on the day of- or day after- surgery) was welcomed by most participants as a first step towards achieving their goals with many indicating a need for greater engagement of staff for rehabilitation during their hospital stay. Our results also suggest a need for contextualizing these standards to ensure older adults consider the implications of their fracture for their identity moving forward when setting goals with healthcare professionals.

Our study findings support those reported by Gesar et al whereby participants acknowledged the importance of self-determinations to achieve their recovery goals but were reliant on professionals to dictate rehabilitation progress as well as providing reassurance and motivation.[26] This strong reliance on healthcare professionals has been cited as a barrier to engagement in healthcare decision making for older adults in different contexts.[42] Increased staffing to enable the participant's reported need for further access to rehabilitation to optimize recovery may warrant further study.

However, this model of additional professional support is not sustainable in the longer term – particularly as patients transition from the acute to the community setting.[43] This was acknowledged indirectly by participants in the current study who indicated confidence in their ability to achieve their goals at home only in the presence of informal social support.

Jensen et al., conducted a qualitative study of lay and healthcare professional perspectives in three Danish hospitals to determine whether patients felt empowered and able to perform self-care on discharge from hospital.[43] They found that no patients were able to recall any information provided on self-care during their hospital stay. Patients reported a desire to take charge of their lives however, they voiced concerns over their level of preparedness to do so and the future implications of their lack of preparedness. This finding is supported by earlier research where participants reported education and encouragement as essential for recovery after hip fracture.[16] Therefore, a strong reliance on healthcare professionals noted in the current study may reflect a lack of education and efforts to empower older adults to take charge of their recovery. Such strategies to empower patients after hip fracture have demonstrated promise for earlier discharge from acute care and return to previous activities in Sweden and should be considered for the UK context.[44]

To assess the quality of this research we considered the credibility (truthful interpretation of participants' views), transferability (to other contexts with other participants), dependability (stability of findings over time) and confirmability (findings could be confirmed by other researchers accessing the data) as key components of trustworthiness.[45] To enable credibility, we provided quotes directly from participants to demonstrate representativeness of the original data and participant views. Further, we completed investigator triangulation for coding of a sample of transcripts. For transferability, we provide age, sex and living arrangement alongside each quote to provide context to the reader. We acknowledge the potential for selection bias as all participants were previously community dwelling without cognitive impairment. This limits the transferability of the findings to those admitted from nursing homes or with cognitive impairment. We describe the

methods in adherence with the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist to improve dependability and confirmability of the research.[32] We disclose the research teams preconceptions at the start of this research. The interviewer was not aware of these preconceptions and independent of each participant's clinical care in an attempted to minimize the potential impact on our analysis and results. Further, participants were informed their interviews would not be shared with any of the clinical team. However, as interviews were conducted in the hospital setting there is the possibility that participants spoke more favorably about their experience in hospital in case their thoughts were fed back to the clinical team. This may have led to an overestimation of the beneficial role of hospital staff in the immediate recovery phase after hip fracture.

This study suggests hip fracture alone, was not perceived as a biographical disruption by older adults although it is presented as a potential tipping point in the loss of independence. In line with Pound et al. it contributed to the wider disruption of advancing age and co-existing conditions. The UK standards for acute physiotherapy after hip fracture align to a certain extent with older adult's goals and perceptions of early rehabilitation for their recovery in acute care. However, for successful implementation of these standards, healthcare professionals need to educate and empower older adults to take charge of their own recovery. Further, we propose a need for goal setting after hip fracture to consider each patient in the wider context of their advancing age and co-existing conditions to facilitate a more tailored approach to rehabilitation. This tailored approach would also empower patients to take early ownership of their recovery in the acute hospital setting.

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REFERENCES

[1] Sheehan K, Williamson L, Alexander J, Filliter C, Sobolev B, Guy P, Bearne L, Sackley C. Prognostic factors of functional outcome after hip fracture surgery: a systematic review. Age Ageing 2018; 47(5):661-670.

[2] Salkeld G, Cameron ID, Cumming RG, Easter S, Seymour J, Kurrle SE, Quine S. Quality of life related to fear of falling and hip fracture in older women: a time trade off study. BMJ 2000;320:341-6.
[3] Phillips AC, Upton J, Duggal NA, Carroll D, Lord JM. Depression following hip fracture is associated with increased physical frailty in older adults: the role of the cortisol: dehydroepiandrosterone sulphate ratio. BMC Geriatr 2013;13:60.
[4] World Health Organisation World Bank. World report on disability. In: WHO, editor. Geneva2011.
[5] Cameron ID, Handoll HH, Finnegan TP, Madhok R, Langhorne P. Co-ordinated multidisciplinary approaches for inpatient rehabilitation of older patients with proximal femoral fractures. Cochrane Database Syst Rev 2000:CD000106.
[6] Auais MA, Eilayyan O, Mayo NE. Extended exercise rehabilitation after hip fracture improves patients' physical function: a systematic review and meta-analysis. Phys Ther 2012;92:1437-51.
[7] Beaupre LA, Binder EF, Cameron ID, Jones CA, Orwig D, Sherrington C, Magaziner J. Maximising functional recovery following hip fracture in frail seniors. Best Pract Res Clin Rheumatol 2013;27:771-88.
[8] Resnick B, Beaupre L, McGilton KS, Galik E, Liu W, Neuman MD, Gruber-Baldini AL, Orwig D, Magaziner J. Rehabilitation Interventions for Older Individuals With Cognitive Impairment Post-Hip Fracture: A Systematic Review. J Am Med Dir Assoc 2016;17:200-5.
[9] Crotty M, Unroe K, Cameron ID, Miller M, Ramirez G, Couzner L. Rehabilitation interventions for improving physical and psychosocial functioning after hip fracture in older people. Cochrane Database Syst Rev 2010:CD007624.
[10] Handoll HH, Sherrington C, Mak JC. Interventions for improving mobility after hip fracture surgery in adults. Cochrane Database Syst Rev 2011:CD001704.
[11] Handoll HH, Cameron ID, Mak JC, Finnegan TP. Multidisciplinary rehabilitation for older people with hip fractures. Cochrane Database Syst Rev 2009:CD007125.
[12] Smith TO, Hameed YA, Cross JL, Henderson C, Sahota O, Fox C. Enhanced rehabilitation and care models for adults with dementia following hip fracture surgery. Cochrane Database Syst Rev. 2015;6:CD010569.
[13] Chartered Society of Physiotherapy. Chartered Society of Physiotherapy Standards for Hip Fracture Rehabilitation 2018.
[14] Royal College of Physicians. Recovering after a hip fracture: helping people understand physiotherapy in the NHS. Physiotherapy 'Hip Sprint' audit report In: RCP, editor. London2017.
[15] Langford D, Edwards N, Gray SM, Fleig L, Ashe MC. "Life Goes On." Everyday Tasks, Coping Self-Efficacy, and Independence: Exploring Older Adults' Recovery From Hip Fracture. Qual Health Res 2018:1049732318755675.
[16] Asplin G, Carlsson G, Fagevik Olsén M, Zidén L. See me, teach me, guide me, but it's up to me! Patients' experiences of recovery during the acute phase after hip fracture. Eur J Physiotherapy 2019:1-9.
[17] Pol M, Peek S, van Nes F, van Hartingsveldt M, Buurman B, Krose B. Everyday life after a hip fracture: what community-living older adults perceive as most beneficial for their recovery. Age Ageing 2019;48:440-7.
[18] Bruun-Olsen V, Bergland A, Heiberg KE. "I struggle to count my blessings": recovery after hip fracture from the patients' perspective. BMC Geriatr 2018;18:18.
[19] McMillan L, Booth J, Currie K, Howe T. A grounded theory of taking control after fall-induced hip fracture. Disabil Rehabil 2012;34:2234-41.
[20] Schiller C, Franke T, Belle J, Sims-Gould J, Sale J, Ashe MC. Words of wisdom - patient perspectives to guide recovery for older adults after hip fracture: a qualitative study. Patient Prefer Adherence 2015;9:57-64.

[21] Sims-Gould J, Stott-Eveneshen S, Fleig L, McAllister M, Ashe MC. Patient Perspectives on Engagement in Recovery after Hip Fracture: A Qualitative Study. J Aging Res 2017;2017:2171865.
[22] Taylor NF, Barelli C, Harding KE. Community ambulation before and after hip fracture: a qualitative analysis. Disabil Rehabil 2010;32:1281-90.
[23] Ziden L, Scherman MH, Wenestam CG. The break remains - elderly people's experiences of a hip fracture 1 year after discharge. Disabil Rehabil 2010;32:103-13.
[24] Young Y, Xiong K, Pruzek RM, Brant LJ. Examining heterogeneity of functional recovery among older adults with hip fractures. J Am Med Dir Assoc 2010;11:132-9.
[25] Griffiths F, Mason V, Boardman F, Dennick K, Haywood K, Achten J, Parsons N, Griffin X, Costa M. Evaluating recovery following hip fracture: a qualitative interview study of what is important to patients. BMJ Open 2015;5:e005406.
[26] Gesar B, Hommel A, Hedin H, Baath C. Older patients' perception of their own capacity to regain pre-fracture function after hip fracture surgery - an explorative qualitative study. Int J Orthop Trauma Nurs 2017;24:50-8.
[27] Bury M. Chronic illness as biographical disruption. Sociol Health Illn 1982;4:167-82.
[28] Bourke JA, Hay-Smith EJ, Snell DL, DeJong G. Attending to biographical disruption: the experience of rehabilitation following tetraplegia due to spinal cord injury. Disabil Rehabil 2015;37:296-303.
[29] Sveen U, Soberg HL, Ostensjo S. Biographical disruption, adjustment and reconstruction of everyday occupations and work participation after mild traumatic brain injury. A focus group study. Disabil Rehabil 2016;38:2296-304.
[30] Brink E. Adaptation positions and behaviour among post-myocardial infarction patients. Clin Nur Res 2009;18:119.
[31] Ritzer G. Essentials of Sociology. SAGE; 2015.
[32] Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. Int J Qual Health Care 2007;19:349-57.
[33] Moser A, Korstjens I. Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. Eur J Gen Pract 2018;24:9-18.
[34] Kristensen MT, Foss NB, Ekdahl C, Kehlet H. Prefracture functional level evaluated by the New Mobility Score predicts in-hospital outcome after hip fracture surgery. Acta Orthop 2010;81:296-302.
[35] Bjorgul K, Novicoff WM, Saleh KJ. American Society of Anesthesiologist Physical Status score may be used as a comorbidity index in hip fracture surgery. J Arthroplasty 2010;25:134-7.
[36] Braun V, Clarke V. Using thematic analysis in psychology. Qual res psych 2006;3:77-101.
[37] Strauss A, Corbin J. Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory. Thousand Oaks, CA: Sage Publications Inc.; 1998.
[38] Diong J, Allen N, Sherrington C. Structured exercise improves mobility after hip fracture: a meta-analysis with meta-regression. Br J Sports Med 2016;50:346-55.
[39] Sheehan KJ, Fitzgerald L, Hatherley S, Potter C, Ayis S, Martin FC, Gregson C, Cameron ID, Beaupre L, Wyatt D and others. Inequity in rehabilitation interventions after hip fracture surgery: a systematic review. Age Ageing 2019; 48(4):489-497.
[40] Carricaburu D, Pierret J. From biographical disruption to biographical reinforcement: the case of HIV-positive men. Sociology of health & illness 1995;17:65-88.
[41] Pound P, Gompertz P, Ebrahim S. Illness in the context of older age: the case of stroke. Sociology of health & illness 1998;20:489-506.
[42] Ekdahl AW, Andersson L, Friedrichsen M. "They do what they think is the best for me." Frail elderly patients' preferences for participation in their care during hospitalization. Patient Educ Couns 2010;80:233-40.

[43] Jensen CM, Smith AC, Overgaard S, Wiil UK, Clemensen J. "If only had I known": a qualitative study investigating a treatment of patients with a hip fracture with short time stay in hospital. Int J Qual Stud Health Well-being 2017;12:1307061.
[44] Lofgren S, Hedstrom M, Ekstrom W, Lindberg L, Flodin L, Ryd L. Power to the patient: care tracks and empowerment a recipe for improving rehabilitation for hip fracture patients. Scand J Caring Sci 2015;29:462-9.
[45] Korstjens I, Moser A. Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. Eur J Gen Pract 2018;24:120-4.

TABLES

Table 1: Questions and predefined prompts used during data collection

Question 1: What was your experience of starting rehabilitation in hospital after your hip fracture surgery?
Predefined prompts: when; how often; support; convenience
Question 2: What was your experience of what you did during your rehabilitation?
Predefined prompts: what did you do; how easy or difficult was rehabilitation
Question 3: What do you feel were the benefits and challenges for your recovery in hospital?
Predefined prompts: related to you; related to your fracture; related to the care at the hospital; when you leave hospital.

Table 2: Description of study participants

	n (%)
Sex	
Women	7 (46.7)
Men	8 (53.3)
Age (years)	
65-74	3 (20.0)
75-84	7 (46.7)
85+	5 (33.3)
Prefracture residence	
Community dwelling (own home)	15 (100)
Living alone	11 (73.3)
Prefracture New Mobility Score (0-9)	
≤ 6	5 (33.3)
> 6	10 (66.7)
ASA* grade (1-5)	
2	3 (20.0)
3	12 (80.0)
Fracture type	
Intracapsular	6 (40.0)
Extracapsular	9 (60.0)
Procedure type	
Intra medullary nail	1 (6.7)
Dynamic hip screw	8 (53.3)
Hemiarthroplasty	6 (40.0)
	mean (standard deviation)
Time since surgery (days)	8.2 (3.8)
Length of stay (days)	13.9 (7.7)

*ASA = American Society of Anesthesiologists, 2 = a patient with mild systemic disease; 3 = a patient with severe systemic disease that is a constant threat to life.

FIGURE CAPTION

Figure 1: Older adults' perspectives of recovery and rehabilitation after hip fracture in the immediate postoperative phase. Grey nodes reflect themes identified from our analyses and how these may relate to the UK standards for acute physiotherapy led by the physiotherapist, and standards led by the physiotherapist and patient. Biographical disruption relates to the theme - anxiety about the future, occurring at the interface between hip fracture and age, and/or coexisting conditions.