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Manuscript title

Hip precautions after total hip replacement and their discontinuation from practice: patient perceptions and experiences

Running heading

Patients' views on the use of hip precautions

Article category

Research paper

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Implications for Rehabilitation (2-4 bullet points)

- Hip precautions may unnecessarily exacerbate patients' anxieties and fear about dislocation following total hip replacement
- Hip precautions impact on patients' recovery both physically and psychologically
- Patients should be advised about moving and returning to activities following total hip replacement, whether they receive hip precautions or not

[MAIN DOCUMENT]

[TITLE]

Hip precautions after total hip replacement and their discontinuation from practice: patient perceptions and experiences

[RUNNING HEADING]

Patients' views on the use of hip precautions

[ARTICLE CATEGORY]

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[ABSTRACT]

Background:

Hip precautions are routinely provided to reduce the risk of dislocation following total hip replacement despite evidence suggesting they provide no additional benefit and may, actually, impede recovery. Our aim was to report the views of patients who had been recruited into a trial comparing outcomes in participants who were prescribed hip precautions with those who were not.

Methods:

Semi-structured interviews were conducted. Topics explored included experiences and opinions of the service (either hip precautions or no hip precautions), information offered, and equipment provided. Thematic analysis was used to identify and report themes.

Results:

Six themes were identified: perceived justification, and advantages and disadvantages for the postoperative recovery regime prescribed, perceived risk, and fear of dislocation, adherence to the postoperative regime prescribed, and experiences of adaptive equipment.

Conclusion:

Participants who received hip precautions had mixed views about their use: some felt they were restrictive whilst others believed they provided reassurance. Participants who did not receive hip precautions were less anxious about dislocating their hip but were unsure how to progress their rehabilitation. The discontinuation of precautions may decrease patients' fears about dislocation but more guidance from rehabilitation staff about how to move safely during recovery is required.

[KEY WORDS]

Patient experience, patient perspective, movement restrictions, total joint arthroplasty, hip arthroplasty, rehabilitation

[MAIN ARTICLE]

Introduction

Total hip replacement is a common surgical intervention for treating persistent joint problems, such as osteoarthritis, which result in pain, reduced mobility, and decreased quality of life. In the UK, over 100,000 total hip replacements were performed in 2017 [1]. Hip dislocation is a well-recognised complication following total hip replacement; to reduce this risk, patients are advised to restrict certain movements (e.g. flexion beyond 90 degrees, adduction, and rotation of the hip), known as 'hip precautions', for between six- and twelve-weeks post-surgery [2].

Hip precautions are routinely provided by the majority of hospitals in the UK [2,3] despite evidence suggesting they are not necessary [4-6]. The widespread practice of prescribing hip precautions is probably due to methodological weaknesses in the evidence base and variations in clinical opinions, which may impact on the confidence of clinicians to change their established practice.

Clinical perceptions and experiences of the use of hip precautions have previously been reported [3,7]. A survey of patients' views of hip precautions indicated that they perceived hip precautions as having a negative impact on daily life [8]; three-quarters of respondents reported that they avoided leaving their house following the operation and two-thirds were unable to perform desired activities due to following hip precautions. Clinicians' views on the potential withdrawal of precautions have also been explored [7]. However, to date, no study has explored patients' perceptions and day to day experiences of hip precautions through in-depth interviews. In addition, no study has explored the perceptions and experiences of patients who are not prescribed hip precautions.

Thus, the purpose of the present study was to explore the perceptions and experiences of recovery following total hip replacement of patients recruited to a trial comparing outcomes of those prescribed hip precautions with those who were not.

(Materials and) Methods

Study design

A qualitative study was conducted within a trial which evaluated the use of hip precautions following total hip replacement, known as HippityHop (Hip precautions after hip operation) [9]. The trial was modelled around a change in the delivery of orthopaedic services, at a

single hospital (Nottingham University Hospitals NHS Trust – City Campus) to patients following elective total hip replacement surgery. The change in service delivery involved the withdrawal of routine hip precautions. The trial consisted of two phases: phase 1 which occurred before the change in orthopaedic services where patients were routinely prescribed hip precautions, and phase 2 which occurred after the change in service, when they were not. Between the two phases was a ‘washout phase’ in which no data were collected. Data collection commenced when staff were confident about delivering the new service (no routine hip precautions) and it was optimally being delivered.

Participants recruited into phase 1 of the study were educated about hip precautions and routinely provided with a standard package of equipment including raised toilet seat, perching stool, and furniture raisers or additional furniture if required. Those recruited into phase 2) were not taught hip precautions and instead were encouraged to move as they were able within a comfortable range and as pain allowed. Equipment was only provided if required.

Semi-structured interviews were conducted with a purposively selected sample of individuals from phases 1 and 2 of the trial.

Ethics

Ethics and research approvals were obtained from Nottingham 2 Research Ethics Committee (REC) - East Midlands (16/EM/0283), the Research and Innovation department of Nottingham University Hospitals NHS Trust (16HC005), and the Health Research Authority (HRA). Written informed consent was obtained for each participant prior to interview.

Participants and recruitment

Participants were recruited from both phases of the HippyHop trial [9], and thus had to meet the eligibility criteria for, and participate in, the trial to be considered for interview. To participate in the trial, participants had to: (a) be 18 years or over; (b) be scheduled for an elective primary total hip replacement; and (c) provide written informed consent. Individuals were excluded if they: (a) were unable to speak or read English; (b) had a previous history of revision surgery on either hip; (c) were admitted for ‘complex’ surgery (as defined by the surgeon, but typically involved bone grafting) or revision surgery; or (d) had dementia documented in their medical notes. Participants were recruited into either phase 1 or phase 2 of the trial, depending on the timing of their surgery in relation to the change in the delivery of orthopaedic services. Those who were admitted early in the trial (i.e. received surgery before the change in service) were recruited into phase 1 of the study and received precautions. Those who were admitted later (i.e. received surgery after the change) were recruited into phase 2 and did not receive hip precautions.

The aim of this study was to recruit a minimum of 20 participants (10 from phase 1 and 10 from phase 2). The sample size was chosen to be practical within the time and resources available. In order to capture diversity in views and experiences participants were purposively sampled, using maximum variation sampling. This was to ensure a wide range of characteristics, reflecting differences in age, gender, living arrangements, and employment status.

Those selected to be interviewed were sent a letter of invitation enclosed with their six-week trial questionnaire. Participants were invited to either contact the researcher or return their reply slip, if they wished to take part in this additional study.

Interview procedure

Data were collected through semi-structured interviews. Participants had the option to have an interview either face-to-face or by telephone. All participants elected to be interviewed by telephone and were contacted at home between six weeks and three months following their total hip replacement surgery. This was to ensure they had followed the treatment regime (hip precautions or no hip precautions) for at least six weeks and were able to sufficiently recall their experiences.

Pilot interviews were conducted with a patient representative and research colleagues to ensure that the interview schedule was appropriate, easily understood, and functional. Minor revisions were subsequently made, which included additional prompts about patients' preoperative expectations of surgery, and potential complications specifically dislocation.

The final interview schedule covered the following topic areas:

- Information received about treatment and recovery
- Equipment provided or recommended
- Experiences and impact of treatment regime on daily life (e.g. activities of daily living, functional tasks, quality of life)
- Whether pre-surgical expectations were met

Interviews were conducted by one of the researchers (CJL) in July and August 2017 (Phase 1) and in January and February 2018 (Phase 2).

Data analysis

All the interviews were conducted, recorded, and transcribed verbatim by the same researcher (CJL). QSR International's NVivo9 software was used to manage the data, which were analysed thematically (Braun and Clarke, 2006) using an inductive approach. One researcher (CJL) read the complete data set to familiarise them self with the content, and independently identified initial codes. A sample of scripts were read and coded independently by a second researcher (CC). Both researchers reviewed, revised, and agreed on the final codes. CJL then coded each script and identified potential themes. These were then reviewed and refined with the second researcher (CC), and definitions of the themes agreed.

Interview findings

Thirty-six total hip replacement patients were invited to be interviewed across both phases. Of these, 28 responded, four of whom declined to be interviewed. A total of 24 interviews were conducted, 12 from phase 1 (precautions) and 12 from phase 2 (no precautions).

Phase 1 interviewees comprised seven males and five females, with a mean age of 64 years (range of 41-88 years). Phase 2 interviewees consisted of seven males and five females, with a mean age of 63 years (range of 51-78 years). Participant characteristics are reported in Table 1. Interviews ranged in duration from 18 minutes to 57 minutes, with a mean duration of 35 minutes.

[INSERT TABLE 1 HERE]

The participants described how the service they received impacted upon their recovery following total hip replacement surgery. Six themes were identified across both phases which are displayed in Table 2.

[INSERT TABLE 2 HERE]

1. Perceived justification for the postoperative recovery regime prescribed

Phase 1 participants were able to recall hip precautions, describing them as ‘rules’ that they were advised to follow for six weeks. Patients explained how hip precautions reduced the risk of dislocation, whilst soft tissue around the new joint healed, and the muscles regained strength.

“They offer this information as a precaution so you don’t dislocate your hip because obviously it all has to heal ... you’ve got to build up the strength in your muscles to hold it together” (Participant 10, phase 1)

Some participants in phase 2 were also aware of hip precautions and the restrictions they imposed on specific movements. The change in advice and prescription of hip precautions was seen as an improvement or advancement of surgery in terms of aiding and progressing their recovery.

“I’m aware that the advice given to patients about what they can and cannot do has changed ... it’s a more relaxed regime now” (Participant 3, phase 2)

2. Perceived risk of dislocation

Participants described discussions they had with staff about potential complications of total hip replacement surgery, in particular the risk of dislocation. Phase 1 participants had mixed

opinions about the possibility of dislocation, some considered it unlikely whilst others perceived that there would always be a risk.

“... and he actually demonstrated the position which is not a position that I would probably get into in normal circumstances. So, in fact, he reassured me, but it is that nagging doubt in your mind” (Participant 12, phase 1)

Some phase 2 participants reported that staff had explained the risk of dislocation was small due to advances in surgery and prosthesis development. For many of these participants, there was little concern about dislocation; justifications and explanations were offered by participants as to why they believed dislocation would not happen to them. These included factors such as their age, cautiousness, believing themselves unlikely to put their hip in an at-risk position, and avoiding thinking about dislocation.

“I thought well plenty of people have had it done, they can't be that, you know, they're not likely to happen is what I was thinking” (Participant 7, phase 2)

3. Fear of dislocation

3.i. Anxiety about movement

Participants in phase 1 reported concerns about the possibility of dislocation. They described being initially very fearful about dislocation which made them cautious about certain positions. Some participants remained concerned even after the period of hip precautions had expired.

“I was anxious about that. I'm still slightly anxious but I've noticed, I mean they've said now unrestricted movement, but obviously you have to be still careful of certain things” (Participant 3, phase 1)

Without hip precautions to guide patients in phase 2, there was some uncertainty about what they were able to do. Several participants described how they were fearful of dislocation, were wary of performing certain movements or activities, and constantly questioned how they should be moving.

“I think probably for me the thing that, it was the afterwards, things like how do I know whether I can do something ... they were saying be careful because there’s a risk of dislocation, which I was aware of. But then you’re conscious of that and you’re sort of thinking well should I be doing this and should I be doing that or not?”

(Participant 1, phase 2)

3.ii. Need for information and reassurance

The lack of information provided in phase 1 about how to move safely after the end of the hip precautions period further exacerbated fears about the prospect of dislocating their hip.

“I was scared about dislocating it and I still am ... the biggest worry I have is about how to move without dislocating it ... I was scared to raise my knee too much as that could dislocate it ... I think maybe for me the lack of knowing is fearful” (Participant 12, phase 1)

The potential removal of hip precautions in the future was discussed with participants in phase 1 who expressed a range of opinions. One patient had mixed views about their removal from routine practice; they perceived hip precautions as providing clear guidance, but also made them afraid to move.

“I think that is good and bad because obviously ... [it’s] such a huge operation ... [it] is really fundamental, you do need to know what you can and can’t do to some extent.

However ... [the information provided regarding hip precautions] was almost like it was too frightening, it was too much warning” (Participant 12, phase 1)

However, for most participants in phase 2, surgical advancements and reassurance from staff, reduced the anxieties associated with the risk of dislocation.

4. Adherence to the postoperative recovery regime prescribed

Participants in phase 1 considered themselves to be compliant with hip precautions, and the majority described how they adhered to hip precautions as instructed, with some applying them to all situations. Participants described how they followed hip precautions strictly and did not try to ‘push the boundaries’ of the restricted positions. Yet, whilst some stated that they constantly abided by precautions, others reported forgetting on occasion.

“I did exactly what I was told in all honesty, I didn’t do anything I wasn’t told to do ... I just left them as gospel, things not to do ... I think I forgot once, I dropped something and picked it up without thinking” (Participant 5, phase 1)

Despite a majority of participants in phase 1 reporting that they adhered to precautions ‘religiously’, some had stopped sleeping on their back before the end of the six-week precaution period, mostly around four weeks post-surgery. Participants explained how they felt comfortable to return to their usual sleep position before the end of the six-week period and used pillows to help support their leg in bed.

“I tried to sleep exclusively on my back ... but after about four or five weeks I put a pillow towards my right leg, so I didn’t bring my left leg over or anything like that” (Participant 11, phase 1)

One participant in phase 2 reported following hip precautions, despite being informed of the new regime, as they remained concerned about dislocating their hip based on the experiences of a family member.

“I knew I wasn’t to twist or, because my Mum’s popped out so. I was very careful not to dislocate it if you like ... I was concerned, and I was very careful not to sit ... she dropped something, and she twisted in her chair to reach down and they had to call the ambulance. She was in a lot of pain with it” (Participant 11, phase 2)

5. Perceived advantages and disadvantages of the regime prescribed

5.i. Perceived advantages

Participants in phase 1 described how hip precautions prompted them to avoid certain ‘at risk’ positions. Hip precautions were considered to provide guidance about what one could and could not do, preventing positions that could potentially lead to dislocation. Adhering to hip precautions and an exercise programme was reported by some to help reduce anxieties and provide a focus for increasing the muscle strength around the new hip joint.

“I perhaps wouldn’t have done anything because I’d have been fearful, just of dislocation ... but knowing what I could and couldn’t do, you know, put my mind at rest hugely” (Participant 4, phase 1)

Participants in phase 2 reported discussing precautions with members of staff, mainly physiotherapists, to provide clarification about information received from friends who had previously had hip replacements. Some participants were relieved that hip precautions were no longer in place and that they were free to move and sleep in any position that they felt comfortable. One patient felt that hip precautions, and supine sleeping in particular, would have hindered her recovery and had a detrimental effect on her psychological well-being.

“You can sleep in different positions if I’d been told I had to sleep on my back for six weeks, I’d be in even more of a psychological mess than I was ... if I had to be restricted in anything else, I’d have, you know, I’d have been sectioned I think”

(Participant 12, phase 2)

5.ii. Perceived disadvantages

Participants described the impact they believed hip precautions had on their recovery. Hip precautions were perceived to create anxiety and potentially prevent them from progressing and returning to activities. Participants described how, even though they no longer had to follow precautions, they still remained anxious about certain activities that could lead to injury or a fall (such as walking over uneven terrain), and consequently result in dislocation.

“I was anxious I think to begin with because I was quite scared about the restrictions, I think I held myself back ... I think I am still a little scared of what I could do or couldn’t do with it. There is just a little bit, there’s a little bit of fear of how I could hurt myself” (Participant 12, phase 1)

Without hip precautions to guide participants in phase 2, there was some uncertainty about what they were able to do. Physiotherapists were thought to provide reassurance about how to progress their rehabilitation and return to their preoperative activities and ‘normal’ life.

“Seeing the physio was helpful because they basically reassured me that I should just get on with daily life ... I think I was overly cautious, I was not doing things because I thought they might cause a problem” (Participant 6, phase 2)

5.iii. Impact of regime on daily activities

Participants in phase 1 described supine sleeping as the most difficult hip precaution to follow. All participants reported poor quality sleep at night, and napping during the day to compensate. Participants described how they found it difficult and uncomfortable to sleep on their backs. Participants often resorted to using a number of different methods, including pillows and medication in order to help them sleep, with many reporting lower back pain and sore heels as a result.

“I found it really difficult staying on my back ... I just didn't like it and I didn't get used to it either ... I seized up in the night ... [and] I had lots of broken sleep for a long time ... it was just real discomfort at night, that got to me and made me feel very tired and a bit fed up” (Participant 4, phase 1)

In phase 2, participants were not required to sleep in a supine position, however, many still reported sleep disturbances. The majority struggled to find a comfortable position in bed and resorted to using pillows to get into a more comfortable position. They reported sleeping on their back for the first couple of weeks and described this as the most comfortable position. They also expressed concerns about sleeping on the operated side, predominantly due to the tenderness of the wound. Several participants described how they had tried to return to side sleeping around two- or three-weeks post-surgery. Despite returning to side sleeping, participants were only able to tolerate this for short periods

Participants in phase 1 described how hip precautions restricted their daily activities, hobbies and leisure activities. Participants explained how once they stopped following precautions, and were able to perform the previously restricted movements, they felt their recovery progress had slowed or declined.

“Now I’ve got to the point when I’m allowed to break the rules ... it sort of feels a bit as though I have gone backwards. I’m suffering more pain and I feel I can't walk as well as I was used to. I guess it is probably to be expected that things will be different when you start twisting and bending and so on. I am putting more strain on it”

(Participant 9, phase 1)

Some participants discussed how hip precautions were affecting them longer-term as they were still concerned about the risk of dislocation. One patient described how they were unsure how to perform certain movement patterns of everyday activities, such as picking something up off the floor.

“I am a bit tentative ... there is a restriction on bending down so I’m not sure about bending ... I bend at a really awkward angle because I’m not sure how I’m supposed to bend, or how I can bend, so that’s a slight problem. I find bending quite difficult, at the moment, I sort of bend as you do when you bend to touch your toes ... now I am not sure if that is good, or bad, or indifferent ... these are all the things that are a problem not knowing what you can do afterwards, to dislocate” (Participant 12, phase 1)

6. Experiences of adaptive equipment

6.i. Provision and perceived need

Phase 1 participants all reported that they had been issued with raised toilet seats, perching stools and sofa raisers. On the whole, participants were positive about the equipment however, a small number believed that they received items which they did not necessarily need.

“Raised toilet seat, a perching stool for the kitchen, one for the bathroom, a commode, just in case my, say, in case I had to sleep downstairs or something which I didn’t, so I’ve not used the commode – so yeah that’s what I was given. And that was all set to height when it was delivered” (Participant 4, phase 1)

Despite the removal of hip precautions, all participants in phase 2 also described receiving some adaptive equipment, with toilet aids and perching stools being the most commonly reported. On the whole, most participants in phase 2 appeared to use the adaptive equipment for approximately two to four weeks. Perching stools were reported to be used for a longer period of time, up to six weeks, to assist with personal and domestic activities.

“I suppose probably up until I came for my six weeks, I was using the perching stool to sit and do the ironing. And it was nice in the shower room, I’d sit on it when I got out the shower, put a towel on it and sit on it and dry myself” (Participant 11, phase 2)

However, one patient in phase 2, who had previously had a stroke, believed that not enough consideration of her equipment needs was taken, in view of the particular difficulties that she had with weight-bearing. The patient was uncertain about who should have assessed them for equipment and the process of obtaining the required equipment.

“Well certainly on a practical level I needed more equipment ... eventually, when I came out of the ward, I was provided with lots of stuff, you know, gutter frames, raised toilet seats, which had never been an issue before ... it wasn't even considered that I might need them... I just generally feel that not enough consideration was given to the difficulties I was going to have” (Participant 5, phase 2)

Phase 2 participants had mixed opinions about whether they would be able to manage without adaptive equipment. A small number of participants felt that they might have been able to manage without some pieces of adaptive equipment; however, the majority believed that they were essential initially.

“I would have struggled to get off the toilet, well, I just, you’re not quite at the right height at the beginning. It’s better not to be as low on the toilet seat and it was easier to get up and down from” (Participant 12, phase 2)

6.ii. Usefulness

Participants in both phases described raised toilet seats and toilet frames as the most practical pieces of equipment provided, helping transfer to and from the toilet. Toilet frames were considered to be a vital piece of equipment in the early days, in particular, providing assistance and support when standing. Perching stools were also found to be beneficial and were described as ‘wonderful’, ‘handy’, and ‘invaluable’. However, they were reported to be more useful in the bathroom rather than the kitchen, with those in the kitchen often not used. Whilst almost all participants used the perching stool for its intended use, one participant in phase 1 explained how they found an alternative use for theirs.

“The perch stool for the kitchen, I didn’t really use it much. It was quite nice when the weather was good ... I could use that to just perch on outside, sit in the sun”

(Participant 3, phase 1)

Small aids were beneficial and had been purchased by nearly all the participants in both phases, with long-handled shoehorns and helping hands/grabbers the most commonly bought. Some participants had purchased these before their total hip replacement as they were struggling to put their shoes on or pick items up off the floor pre-surgery. However, some

participants did not perceive a need for them, in particular, those who lived with others who could assist them.

6.iii. Suitability

Some participants in phase 1 found that the adaptive equipment was unsuitable for them and their home situation, they described how the equipment was not appropriate and had to be either altered or exchanged. One patient expressed their concerns when they were informed that their furniture could not be altered.

“They were going to come and raise the sofa. That was a bit of an issue actually.

When they got in, they said we can't raise that sofa and so that was a bit of a worry ... to be told then they couldn't raise the sofa was a huge concern about what I was going to do when I came home” (Participant 3, phase 1)

A few participants in phase 2 reported that the toilet seats provided were unsuitable and that they could not adjust to using one. One patient purchased a toilet seat privately, which he considered was a better fit and more comfortable than the one provided by the hospital.

Discussion

The interview findings demonstrated the mixed opinions held regarding hip precautions. Some participants felt that these were restrictive but accepted them as they believed they were important in reducing the risk of dislocation. Others reported very negative impacts upon their daily life as they were afraid about performing certain movements, even beyond the recommended six-week period. Other participants, who did not have to follow precautions, returned to functional activities more easily, resulting in increased independence and improved quality of life, but felt there was a lack of guidance around their recovery.

We found that the participants who followed precautions could recall them easily. Most of them complied with precautions for at least six weeks, which was similar to the findings of Peak et al. [10] who reported that 96% of their patients who were prescribed precautions, complied with them for the required six weeks, and over half (54%) of patients were still following them six months after surgery. Patients in both studies might have complied with precautions long term due to anxiety and uncertainty about how to perform previously restricted movements. This might have also have been due to a lack of patient education about how to protect the joint long term. Whatever the rationale, it meant that participants were restricted in their movements, and therefore in their recovery, for longer than they needed to be. By comparison, Lee et al. [8] reported that less than a quarter (23%) of patients in their study followed all precautions for six weeks after surgery, as two-thirds believed that precautions prevented them from completing desired activities and made them reluctant to leave the house.

Supine sleeping was reported to be the hardest precaution to comply with and, interestingly, patients not following precautions still experienced sleep difficulties and disturbances. Such difficulties with supine sleeping following total hip replacement have been reported previously. Lee et al. [8] found that patients adhering to precautions had sleep disturbances, while Peak et al. [10] reported that many patients did not return to side sleeping until the end of the required period of precautions. Indeed, sleep did not return to 'normal' for some until three-month post-surgery [11]. This is an important issue as sleep deprivation has been linked to increased levels of anxiety and decreased patient satisfaction [11] and sleep disturbances in the first month following surgery are believed to be an independent predictor of three-month functional limitations [12]. In our study, patients perceived the option of side sleeping as the

greatest benefit from withdrawing hip precautions. Despite being able to sleep in a position of choice, many patients in phase 2 slept mainly on their back for the first couple of weeks, only sleeping for short periods on their side due to initial difficulties and tenderness of the wound. Sleeping thus seemed to be an important issue for all patients undergoing hip replacement and may warrant further specific research.

In our study, some patients following precautions reported receiving unsuitable and unnecessary equipment. Aside from practical inconvenience, the prescription of unsuitable and unnecessary equipment also has financial implications. In a study by Allen et al. [13], a functional assessment suggested only 38% patients required equipment after total hip replacement surgery. Indeed, it has also been suggested that the removal of precautions could potentially save over 3000 bed days and approximately £165,000 worth of equipment [14]. It would seem that providing equipment on a one to one basis could lead to considerable savings although, in our study, patients not following precautions believed that equipment was necessary initially as it provided comfort and security when performing daily activities, such as getting on and off the toilet.

Hip precautions represent a major lifestyle modification for many patients and can hinder a number of functional activities, resulting in a slower return to activities, such as mobility, shopping, and driving [15]. Withdrawing hip precautions has been associated with a quicker and better return to daily functions, and has been reported to increase patient satisfaction [16]. This reflects our findings, as patients who did not receive precautions appeared to be more confident about returning to functional activities and returned to them earlier than those who used precautions. However, some uncertainty remained. Although the new regime provided more individualised care that was tailored appropriately to patient need during recovery, the

findings suggest that patients were unsure how to progress their rehabilitation and when they were safe to return to more demanding daily and leisure activities. Wylde et al. [17] found that almost a quarter of their study sample did not engage in leisure activities one year after surgery despite a vast majority of their participants rating leisure activities as very important preoperatively. Difficulties in performing activities may lead to dissatisfaction with the outcome of surgery and reduced quality of life. Further research should determine exercise progression timescales which would enable patients to have realistic expectations and set goals to return to more demanding activities of daily living and desired leisure activities.

Strengths and limitations

The main limitation of this study was the potential bias of participants who were recruited. Whilst the intended sample size was selected using maximum variation technique, there was self-selection bias as a number of participants declined to be interviewed. The reasons for this are not known.

Participants were interviewed at between six weeks and three months post-surgery. This ensured that participants in the precautions group were more likely to recall the advice given following the cessation of the six-week hip precaution period and the effects that it had on their daily life. The no precautions group were interviewed at a similar time period to the precautions group after surgery to enable comparison between the groups' views. However, participants were unable to make direct comparisons of the two regimes provided and views may have been different if they had experienced both treatments.

This study involved a change in clinical practice (i.e. removing the routine prescription and provision of hip precautions). Whilst the process of change involved considerable staff

education and training, it is possible that some members of the clinical team may not have completely changed their practices and some staff may have struggled to change their old habits.

Conclusion

This was the first study to explore in-depth patient perceptions and experiences of hip precautions. Participants held mixed opinions. Those in the hip precautions phase felt that precautions provided guidance but were frightening and made them very cautious about dislocation. Participants in the no precautions phase were less anxious about the prospect of dislocation and appeared more confident about returning to activities, but, without precise instructions, were unsure about when it was safe to return to more demanding activities of daily living and leisure activities. Both groups had problems with sleeping but this was less so in those who did not follow precautions. Equipment was considered necessary by both groups during the initial periods of recovery, although a more individualised approach to equipment prescription was believed to reduce the amount of unnecessary and unsuitable equipment provided. Overall, whilst the discontinuation of precautions may decrease patients' fears and anxieties about the potential risk of hip dislocation, guidance and reassurance are needed from rehabilitation staff about how patients can progress their rehabilitation during their recovery after total hip replacement surgery.

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Table(s) with caption(s)

TABLE 1. ALL PARTICIPANT CHARACTERISTICS

PHASE	PARTICIPANT	GENDER	AGE	LIVED ALONE	EMPLOYMENT STATUS
1	1	M	48	N	Self-employed
1	2	M	58	N	Employed
1	3	F	53	Y	Employed
1	4	F	41	N	Unemployed
1	5	M	58	N	Employed
1	6	M	66	N	Retired
1	7	F	76	N	Retired
1	8	F	88	Y	Retired
1	9	M	84	N	Retired
1	10	M	66	N	Retired
1	11	M	70	N	Retired
1	12	F	65	Y	Retired
2	1	F	65	N	Employed
2	2	M	51	N	Employed
2	3	M	72	N	Retired
2	4	M	75	N	Retired
2	5	F	78	N	Retired
2	6	M	63	N	Retired
2	7	F	58	Y	Employed
2	8	M	51	N	Employed
2	9	M	52	N	Employed
2	10	M	55	N	Retired
2	11	F	73	N	Retired
2	12	F	61	Y	Employed

TABLE 2. THEMES AND SUBTHEMES OF THE PATIENT INTERVIEWS

THEME 1	Perceived justification for the postoperative recovery regime prescribed
THEME 2	Perceived risk of dislocation
THEME 3	Fear of dislocation i Anxiety about movement ii Need for information/reassurance
THEME 4	Adherence to the postoperative recovery regime prescribed
THEME 5	Perceived pros and cons of regime prescribed i. Perceived advantages ii Perceived disadvantages iii Impact of regime on daily activities
THEME 6	Experiences of adaptive equipment i. Provision and perceived need ii Usefulness iii Suitability