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Understanding factors influencing the choice of discharge destination by older patients post total lower limb replacement: A qualitative study

Shuzhen Chee[1], Annabelle Yen Peng Neo[1], Lynette Suxin Chen[2], Eunice Yee Lin Seah[1], Chi Ling Li[1], Nay Linn Aung[1] and Thurgathavi Vellasamy[1]

Abstract

Background: In Singapore, the clinical pathway for total knee replacement was introduced in 1997 to streamline multidisciplinary care and reduce length of stay for patients in acute hospitals. However, patients who chose to be discharged to a community hospital for rehabilitation currently have a longer length of stay due to the higher demand and longer waiting time for beds in these step-down care facilities. To our knowledge, no qualitative studies have been done in Singapore to investigate the post-discharge issues faced by these patients. This study aims to understand how decisions about discharge were being made among elderly patients post-discharge.

Design: Grounded theory qualitative methodology was applied.

Method: Data was collected from nine inpatients who recently underwent total knee replacement or total hip replacement surgery in a tertiary hospital in Singapore by in-depth interviews conducted between October 2012 and July 2013. Data was analyzed using thematic analysis.

Findings: Three major themes emerged from the interviews when participants were asked about the reasons for choosing a community hospital instead of going home after discharge. The themes were: perceived lack of caregiver; lack of confidence; and services provided in the community hospitals.

Conclusion: This study showed that factors related to perceived unavailability of caregivers, low level of confidence and accessibility of comprehensive community rehabilitation services were important considerations among elderly patients when choosing their discharge destinations and care. Relevant stakeholders can then explore solutions to these problems so as to correctly site patients.

Keywords

Nursing, qualitative, total knee replacement, total hip replacement, discharge, community hospital

Introduction

As the world population ages, cases of osteoarthritis (OA) is also projected to rise. Within the period of December 2012 to December 2013, a total of 3397 total joint replacements were conducted in Singapore. With the number of elderly estimated to increase from 350,000 today to 960,000 in 2030, the number of such surgical procedures is set to increase.[1]

OA commonly affects the knee. Severe knee OA causes pain, disability, and loss of health-related quality of life. Total joint replacement allows patients to have pain relief, increased mobility, and quality of life with results persisting up to 7 years post-surgery.[2]

Currently in Singapore, six new hospitals are in the pipeline to meet the increasing demand by the aging population for hospital beds. The Health Minister of Singapore has advocated the need "to get people to turn to community care and home care options, such as nursing homes or daycare centers for the elderly" to ease the bed crunch at acute care hospitals.[1]

A review of literature from 2000–2013 showed that most studies regarding post total knee replacement (TKR) and total hip replacement (THR) had been quantitative and

[1]Division of Nursing, Singapore General Hospital
[2]Agency for Integrated Care, Singapore General Hospital

Corresponding author:
Chee Shuzhen, Division of Nursing, Singapore General Hospital, 31 Third Hospital Avenue, Bowyer Block B, Level 2, 168753, Singapore.
Email: charsiewshuz@gmail.com

extensively studied the various aspects of surgical outcomes such as post-operative pain, patients' satisfaction and length of stay (LOS) in acute hospitals. A quantitative study done in Singapore by Ong and Pua[3] reported that TKR patients with a long LOS (>4 days on average) were less likely to report having a caregiver at home and more likely to require care at a step-down facility.

The number of qualitative studies exploring the different aspects of patients' TKR and THR experiences were, in comparison, much lower and were largely conducted in Western countries. Out of the seven qualitative studies that were done on TKR patients, only one was performed in an Asian country.[4] These studies explored different aspects of patients' experiences with replacement surgeries. Topics of interest include experiences of patients before and after TKR and THR.[4,5] One study depicts TKR as an "extensive life event",[6] and other studies show that replacement surgeries demand physical, psychological, and social adaptations on the part of the patient.[7–9] A focus group study by Showalter et al.[10] involving five patients and their spouses revealed that there was significant distress due to unanticipated role changes in the household and the sudden loss of professional help when transitioning from hospital to home. Hence, patients who live alone or are of the female gender are more likely to be discharged to a rehabilitation unit. At the time of this study, there were no published studies on the decision-making process of patients post-TKR or THR surgery in Singapore.

With the advent of clinical pathways for TKR in 1997 in Singapore, patients are being discharged from hospitals earlier; these patients and caregivers are left to fend for themselves in terms of self-care and caregiving.[11,12] According to statistics from January 2012 to January 2013 collected in Singapore General Hospital, 10% of 2027 TKR cases and 12% of 224 THR patients opted to go to a community hospital. The LOS for a TKR surgery is 5 days. However, for patients who choose to wait for placement at a community hospital, the LOS increases to 8.3 days. The average LOS for all THR patients in the same period was 6.7 days, increasing up to 11.4 days if they were waiting for placement. It is of concern that some patients opted to wait for a community hospital placement although they were medically deemed suitable for discharge to their own home. Henceforth, this study aimed to explore the decision-making process among elderly patients with regards to their discharge destinations following TKR or THR surgery in Singapore. This study aims to uncover new insights on the thought processes of patients when choosing a discharge destination. This information would be beneficial to relevant stakeholders in a time where we would expect increasing numbers of such lower limb replacement surgeries in the future.

Aim

This study aimed to explore the decision-making process among elderly patients transitioning to a community hospital post-TKR or THR surgery in Singapore.

Methods

Study design

A qualitative, grounded theory approach was used as it would provide an understanding of the decision-making process used by patients when deciding on their discharge destination.

Participants and recruitment

The participants were recruited from an orthopedic ward in a tertiary hospital in Singapore. Eligible participants were recruited based on the following inclusion criteria: (1) admission must be for a primary TKR or THR; (2) ability to converse in English, Mandarin, or Malay; (3) must be community ambulant prior to the surgery; or (4) decided on a community hospital as the step-down care prior to discharge although medically deemed suitable for discharge to own home. The exclusion criteria were participants: (1) who suffer from cognitive impairment; (2) who were foreigners; or (3) whose current admission was for a revision TKR or THR. Participants with previous hip or knee replacement surgeries done were excluded as they might have prior stay in a community hospital or may have developed coping strategies from the previous surgery.

The participants in this study were chosen by theoretical sampling, where results developed from the analysis of each interview would guide the choice of subsequent interviews, so as to attempt to explore more in depth in a particular aspect. For example, the first participant, Anne, a 70-year-old lady, expressed that her son was the only caregiver and that it would be inappropriate for him to aid her in showering. With that in mind, we sought to select a participant with a caregiver of a different gender and explored if that was also a concern.

Ethical considerations

Ethical approval was obtained from the hospital's Centralized Institutional Review Board (CIRB 2012/410/A). Written informed consent was obtained from the participants.

Data collection

Open-ended, in-depth interviews were conducted and audiotaped.

Potential participants were identified by the ward nurses as those who had applied to community hospitals post-discharge, and were waiting for placement.

Some of the interviews were conducted by two researchers, where one conducted the interview while the other took field notes. In other scenarios, interviews were done solely by one researcher who was able to converse in the language of the participant. The initial question to the participants was "Do you think you are ready to be discharged? If not, why?" Subsequently, we explored topics related to discharge decision making. Topics asked included reasons for choosing a community hospital, patients' thought processes when they were informed that they can be discharged, and their concerns with going home.

There were nine interviews in total, conducted between October 2012 and July 2013. Participants were interviewed at their bedside a few days after surgery if they had consented to the study and audiotaping of their interviews.

Brief field notes were written during each interview depicting the state of emotion of the participants, key phrases, and cues.

Data analysis

Thematic analysis was used to analyze the data.[13] Audio recordings were transcribed by the same researcher who conducted the interview. Interviews in other languages (Malay and Mandarin) were translated to the English language by the same researcher who conducted that interview, and back translation was done by another researcher to ensure accuracy.

Each researcher then marked out certain dialogs in the transcripts and coded them.[14] Each English transcript was coded by at least three researchers individually. A meeting was held to compare and contrast the codes that each of the individual researchers identified. Each code was supported by an exact *in vivo* expression. Any disagreements pertaining to interpretation of the transcripts were resolved with discussion. After each meeting, the codes were selected and compiled into a list. A subsequent interview was conducted after one audiotaped interview had been transcribed, coded, discussed, and summarized. This process continued until the researchers concluded that there were no new codes being mentioned. At the end of the ninth interview, the researchers condensed the codes into themes.

Rigour

Credibility, dependability, confirmability, and transferability are the four aspects that make up the gold standard for ensuring trustworthiness in qualitative research.[15] To enhance credibility, analyst triangulation was utilized where multiple researchers analyzed the data for themes. This decreased the likelihood of selective perception and investigator bias.[16]

To ensure confirmability, an audit trail was established. All audio interviews, transcripts, and minutes of meetings that were held for discussion of interpretations were kept. This provided proof and support for conclusions drawn by the researchers.[17] An external audit was also done on both the process and preliminary findings of the study by a researcher who was not involved in this study.[18] To increase transferability, detailed descriptions of the research subjects and settings were provided.

Findings

Nine participants were interviewed, of which eight were Chinese and one was Malay. The mean age of the participants was 65. There were six females and three males. Eight of them had a TKR done whereas one had a THR done (Table 1).

Three major themes emerged from the interviews: (1) perceived lack of caregiver; (2) lack of confidence; and (3) services provided by community hospitals.

Theme 1: Perceived lack of caregiver

Subtheme 1: Gender inconveniences. Gender difference between the caregiver and the participant was a barrier for home discharge. The problem of gender occurs only when the caregivers were their children. Female participants felt that it would be inappropriate for their sons to take care of their toileting and showering needs:

> *How can he care for me when he is a boy? I don't have a daughter, if I have, she will be able to care for me. No daughter to take care of me.* [Anne]

> *No way no way ya, and he's a boy, you know. A man, you know, not so convenient, a lot of things he doesn't know how to do…and all that you know.* [Beatrice]

Subtheme 2: Disrupting family members. When caregivers have work commitments, participants were more likely to opt for community hospital as compared with going home. Having caregivers taking time off from work was deemed as disruptive and troublesome by the participants:

> *Aiya don't bother you all la, just go to community la…Because they have to adjust everything, quite difficult also. I don't want to affect their, like, you know, when they, my son, the steward, sometimes off 1 week 3 days, sometimes 4 days. So the sister said if you off 4 days, then I will take 3 days leave…And it is quite troublesome right. Then I say, Aiya don't bother la like this. Don't take la, just convenient working.* [Cassie]

In situations where caregivers were not working, they still had their own family commitments and responsibilities to attend to:

> *She can! But you know, she still got a family to look after. She still have a mother-in-law to take care, and recently exactly, the mother-in-law also sick…She got to take care of the mother-in-law. She can! But let me say even every day, but she can't every hour beside you. 3 hours 4 hours the most, after that, she got to go back.* [Daniel]

Subtheme 3: Patient is a caregiver. In two cases, our participants were caregivers themselves. These two were especially keen for the community hospital because they were motivated to get well to resume their caregiving duties. One of the participants was the main breadwinner of the family as his wife was suffering from cancer and had problems with ambulating due to the chemotherapy. They have a son placed in a special school.

> *Ya, I took care of my wife…Even how that I underwent the operation I will still take care of her la…I told my wife like that, if it is not convenient for you, when I go home and you have to cook meals for me it will also be troublesome, She say, ya la. … Her legs are swollen, so she walks very slowly.* [Ethan]

Gail lives with two daughters and her son, one whom is being cared for at home by her.

> *I have another daughter who does not talk a lot, she requires taking care of. […] Yes, I am taking care of her, now that I am in the hospital […] who take care? She needs somebody to take care, I also need somebody to take care. If I cannot take care of myself how can I go home?* [Gail]

Theme 2: Lack of confidence

In this theme, lack of confidence was largely attributed to participants' fear of falling. This fear of falling was due to many reasons. For some participants, this fear developed because of a history of falling. For some other participants, this fear stemmed from their instability in walking without aid. For the rest, this fear was perpetuated with them being left alone at home.

Table 1. Details of participants interviewed.

Pseudonym	Gender	Age	Ethnicity	Surgery	Marital status	Decision maker	Living arrangement
Anne	Female	70	Chinese	TKR	Married	self	Lives with 2 sons, 1 in full-time job, 1 did odd jobs. Husband stays in nursing home in Johor
Beatrice	Female	64	Chinese	TKR	Widowed	self	Lives with son, husband just passed away prior to surgery
Cassie	Female	65	Malay	TKR	Married	self	Lives with husband, daughter and 2 sons. All in full-time jobs
Daniel	Male	71	Chinese	TKR	Widowed	self	Lives with son and daughter. Son is in a full-time job, daughter is married with children. Wife passed away due to cancer
Ethan	Male	63	Chinese	TKR	Married	self	Lives with wife, who is in cancer-remission. Son is in a school for intellectually disabled
Faye	Female	58	Chinese	TKR	Single	sister	Lives alone
Gail	Female	77	Chinese	TKR		self	Lives with son and 2 daughters. 1 daughter is intellectually disabled. The rest in full-time jobs
Howard	Male	56	Chinese	TKR	Single	sister	Lives alone
Inez	Female	64	Chinese	THR	Married	self	Lives with husband, daughter and son. All in full-time jobs

Some of the participants based their confidence level on the judgment of professionals, for example "physiotherapist's comments".

Subtheme 1: Self-perceived lack of confidence of being alone at home

> *Not confident in what sense?* [Interviewer]
> *In a sense that when I go back, in the daytime, I'll be alone. For me to move around, I'll be not confident.* [Cassie]

Cassie's living environment did not seem to pose any problems to her moving around post-operatively. She had a lift landing on every floor and there was a sitting toilet in her bathroom. There were also two to three steps to get into the door of her home; she verbalized that there is no problem for her getting up the stairs.

> *[The living environment] is ok, except when like I want to get up from my bed, uh, like not confident enough to do it alone.* [Cassie]

She ambulated well with a walking frame, yet to her, confidence means being able to use the quad stick and walk with stability.

> *With frame I am completely confident. With cane the 4 leg [quad-stick] I still not, still wobble here and there…ah once I confident enough then ok [then go home from the community hospital].* [Cassie]

Subtheme 2: Fear of falling

> *There is nobody to take care of me I am afraid of falling down. What I am saying is, if I can go there to stay, after staying I will be better. If not, what if I fall down, won't it be worse off?* [Inez]

Subtheme 3: History of fall

> *If it [knee] is painful and there is nobody around how to walk? Later I fall down. I fell once before I came for the operation, now that I have done the operation, how can I afford to fall again?* [Gail]

> *If I going to stay alone, then I fall down in the day time, nobody will help me. And then ah, if I fall down, it may cause paralyzed. Especially people like me got high blood pressure all this. So uh, and I ever fall down at home, which almost half an hour that nobody can help me because I'm alone at home.* [Howard]

Howard mentioned that he had fallen many times at home and it had become a psychological barrier for him to be alone at home being unstable in his gait.

Subtheme 4: Perception of being well as being able to walk without aid

> *I feel that the best is I stay till I can walk, if not it will be troublesome. When I go home I still have to wash clothes and cook for myself.* [Anne]

> *Now that I walk I feel that it is kind of painful. Because when we walk we want it to feel like it is more natural, like how it was in the past.* [Ethan]

When they were asked what they mean by being fit for home, they replied:

> *If I can walk by myself, without using any aid. If I have to use an aid it means I am still not able to.* [Faye]

> *It means, how do I say it, it means help me till my legs are well so when I am discharged to home, I can slowly stand up to do work like that.* [Anne]

Subtheme 5: Professional judgment "physiotherapist's comments". Participants were seen by a physiotherapist at the bedside to promote early mobilization with a walking aid. The physiotherapists' comments might have affected patients' level of confidence and influence their choice of discharge destinations. Sometimes participants took the comments made by physiotherapists into consideration.

> *He said that my walking, he said that my walking is still slightly unstable, swaying here and there. My shoulders also sway too much, need to use the walking aid then I can walk straight. I shall go there and improve on my ambulation.* [Inez]

Theme 3: Services provided by the community hospital

The decision to go to a community hospital was also due to the fact that these institutions provided solutions to issues which

the participants were unable to handle right after their surgery. These services included getting access to meals, physiotherapy, helping with toileting, and wound care management. Even though participants were scheduled to see the physiotherapist in the hospital a week after discharge home, some felt that they needed the convenience and guidance of daily physiotherapy at community hospitals to do the right exercises.

Subtheme 1: Meals

> *…if I were to go home, there will be no one to cook for me. [Ethan]*

> *[My sister is worried] because the 3 meals at home, there is always no one to buy for me…If I go there, I will not have to worry for my meals because it will be provided there.* [Faye]

> *For me meals are a problem because there is no one to cook for me. There are also no markets near my house, need to take a bus to the market. There are also no coffee shops at my void deck.* [Inez]

Subtheme 2: Physiotherapy services

> *Other than that I also understand that erm the first few…the first week I must come back for physio isn't it? so that's a big problem already…got…transport problem, and getting people to help me to come here…look I staying in the east side…coming to changi is a big problem so I understand that in SA (Saint Andrew's Community Hospital) there is a physiotherapy service u'know so I can do my physiotherapy there.* [Beatrice]

> *I can say that it [my legs] are not so stable yet, so I want to go to a community hospital. The community hospital there has physiotherapy. After I am more stable, then I can walk.* [Inez]

Subtheme 3: Motivation to exercise

> *Uh like uh be there when I need something, toilet. To help me move around much more easier, confidently without scared that I fall down or what la. And also like, uh, help me in my exercise. Because when you alone ah, nobody push you (laughs)…Uh, like one hour later, one hour later then you forget to do (laughs).* [Cassie]

Subtheme 4: Knowing that they are doing the right exercises

> *You are not, so, powerful work so hard you know. You scared you do something wrong nobody knows…At least stay down there another 2 to 3 weeks is much safe, much properly trained for exercise, much properly and then will be cured faster.* [Daniel]

Subtheme 5: Positive experience of relatives, friends, neighbours or own

> *My wife stayed there before. I everyday will be from morning right up to evening I would be there. Evening I go back. Sometimes might be till afternoon 3 plus I go back, take a bath, by 5 I will be back again.* [Daniel]

> *Because my wife's mother also stayed at a community hospital before, particularly this one, that is how I came to know of this place.* [Ethan]

> *My dad used to stay there in the past. My dad had a stroke and was having his rehabilitation there, so we know. That place seemed clean, and it functions just like a hospital. I have been there to take a look around.* [Gail]

> *Now I want to go St. Andrew's [community hospital] because my cousin went to St Andrew's and she told me that it is not bad there. The physiotherapy there is not bad, so I want to go there lor.* [Inez]

> *I know about this community hospital because last time I have a neighbour who had an accident and he was admitted there so I ever went and visited him so I come to know that there's such a thing as this St Andrew Mission Hospital a couple of years ago.* [Beatrice]

> *For Ang Mo Kio [community hospital], I heard it for quite some time already. I got friends who also ever been like that, parents been taken care of in there la.* [Cassie]

Subtheme 6: Proximity to home

> *Because this place is near my house, hougang there, so it is easier, you say correct or not.* [Ethan]

> *[The reason why I chose this community hospital is because]…It is near la. If my kids want to visit me also very convenient.* [Gail]

> *Near to our place. I stay at Tampines. If I am at Tampines it would be easy for my children to come and see me. If I am at Ang Mo Kio [community hospital] they will need about 2 hours of traveling time, very inconvenient, very far…Moreover our relatives all stay around Tampines.* [Inez]

Discussion

The model shown in Figure 1 represents the relationships of factors (as identified in the current study) influencing the choice of discharge destinations by older adults post total lower limb replacement. These factors were derived from our data analysis and represent the thought processes of older patients in determining their preferred choice of discharge destination.

From this study, we were also able to understand the motivators for participants to choose community hospital as their discharge destination from a Singaporean perspective. The themes derived from this study were largely similar to earlier studies.

Perceived lack of caregiver

Having an available caregiver is a vital consideration for patients to decide to go home or the community hospital. This finding is consistent with the results of earlier research[19,20,21] where the presence of family and friends at home gave patients a sense of security, and this feeling was needed before they choose to return home.[20]

Even though participants appreciate support and help from their family after being discharged, many are reluctant to seek help from them as they do not want to become a burden. This is especially so when these family members have their own family and work commitments. Older adults are troubled by the fact that they have to depend on others.[22,23] A meta-synthesis, by Meredith and colleagues in 2012, concerning adults' experiences post-discharge from hospitals following orthopedic intervention reported that dependency on others for support post-operatively may challenge the sense of identity and self-esteem that an individual builds up over a lifetime.[21]

Ziden and colleagues found that when the wife is the patient, there would be a change in roles at home.[24] The period of recovery might be longer than expected, causing distress to both the patient and the caregiver. A qualitative study done by Showalter et al.[10] using focus group interviews with five patients

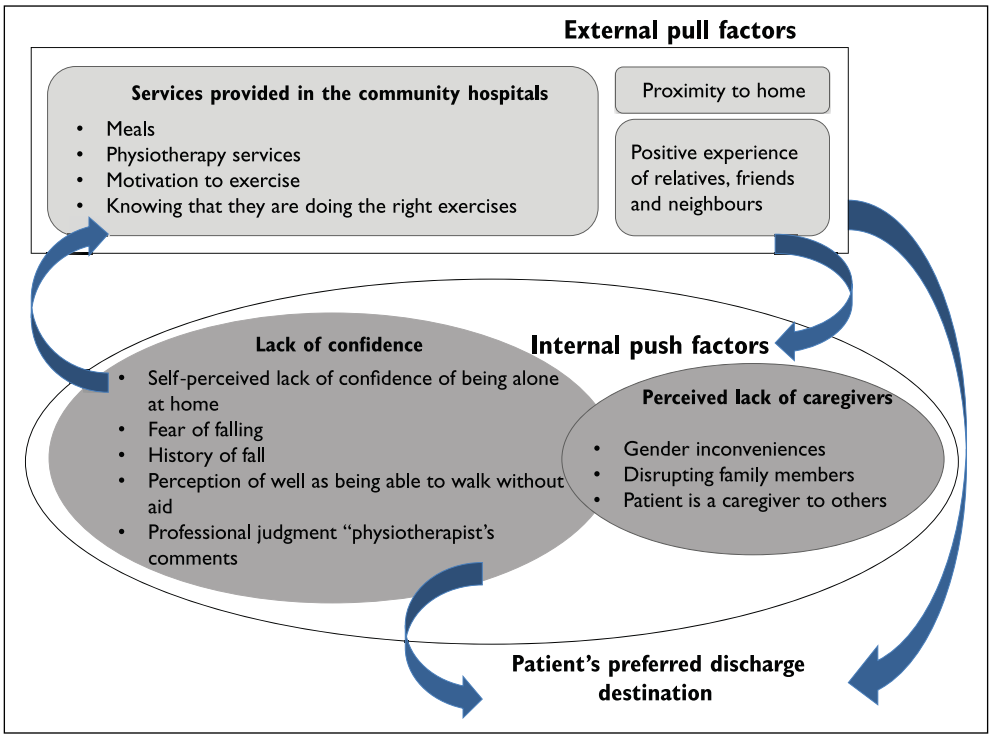

Figure 1. Relationship of factors influencing the choice of discharge destinations by older adults post total lower limb replacement.

and their spouses post total joint arthroplasty showed that this distress was a result of incongruence between the expectations and outcomes of the change in roles.

There was one novel subtheme that was derived from our study: gender inconveniences. This happened in instances where sons are caregivers to their mothers who may need help in toileting. This could be an aspect unique to the Asian culture, but due to the very few qualitative studies done in Asian populations, we were unable to ascertain that.

Lack of confidence

A study by Gustaffson et al.[25] found that after surgery, participants were still worried about falling and lacked confidence in performing some tasks independently. Similarly, our patients felt unsafe being alone at home a week after surgery and verbalized fears about falling. Feelings of vulnerability post-discharge were also illustrated in the study by Showalter et al.[10] Having someone at home alleviates these negative feelings.

Services provided in community hospitals

Patients are generally worried about their rehabilitation journey and possess concerns about returning to their premorbid status post-surgery. The provision of physiotherapy services at community hospitals is one of the reasons why patients choose them over returning home. A cross-sectional study by Rastogi et al.[26] on 31 participants revealed different weekly concerns in the first 6 weeks post-surgery. In the second week post-surgery, patients were generally more worried about activities of daily living and activities that a person would normally perform if they were to return home. Patients in this study generally understood the importance of rehabilitation, but some verbalized the need for motivation and guidance by healthcare professionals to ensure that they are doing the right exercises. Similarly, Jacobson et al.[27] reported that regular supervision was vital to ensure adherence to the physical therapy programme for patients who underwent TKR. In a study by Su et al.[28] 85 post-TKR patients were asked to do a Health Care Needs scale after their discharge from hospital. One of the top three concerns was information on attention to prohibited postures and activities after surgery. Some patients also verbalized that skills and knowledge acquired in the hospital may not be easily transferred to the home setting, as reported in the qualitative study of nine patients who returned home post-TKR or THR by Loft et al.[29] With a structured rehabilitation programme and professional help in community hospitals, community hospitals prove to be a more logical choice for patients than home settings.

Limitations

This study failed to include a higher proportion of Malays and Indians in this study. As the social and family dynamics of each race differs, an inclusion of Indians and a higher representation of Malays in this study may lead to a collection of data that is more robust. There should be a fair representation of participants from other races in research done in a Singaporean context in future studies.

Conclusion

Conversations with our participants concluded that choosing community hospitals as the discharge destination was due to three factors. The first is that participants perceive that they have no caregiver due to working children, among other reasons. The second factor is that participants have a lack of self-confidence due to a previous fall, or a fear of falling. The third is that community hospitals provide the services

that participants require during the acute post-operative period such as ready meals, physiotherapy, and motivation to exercise with professional help. With knowledge of these abovementioned issues and the inevitable increase in the elderly population, a few recommendations can be considered. Firstly, there is a need to increase the number of community rehabilitation centres and improve home care services for patients who require them. Secondly, some select patients and their caregivers can be empowered with wound dressing knowledge and rehabilitative exercises so that they can be confident to return home. Thirdly, in this day and age where the usage of smartphones is ubiquitous and with a telecommunication infrastructure so highly developed in Singapore, educational resources can be based online and be accessible anywhere.

However, it is more important to note that our patients' needs extend beyond just having their medical issues taken care of, and they also require support during the rehabilitation stage. In fact, delivering better all-round care to patients may not only improve treatment outcomes, but may be part of the approach to manage healthcare issues such as bed shortages in hospitals.

Declaration of Conflicting Interest

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References

1. Ministry of Health. MOH 2012 Committee of Supply Speech Healthcare 2020: Improving Accessibility, Quality and Affordability for Tomorrow's Challenges [Internet]. 2012 [cited 15 October 2014]. Available from: https://www.moh.gov.sg/content/moh_web/home/pressRoom/speeches_d/2012/moh_2012_committeeofsupplyspeechhealthcare2020improvingaccessibi.html.
2. Bruyère O, Ethgen O, Neuprez A, et al. Health-related quality of life after total knee or hip replacement for osteoarthritis: A 7-year prospective study. *Arch Orthop Trauma Surg* 2012; 132: 1583–1587.
3. Ong PH and Pua YH. A prediction model for length of stay after total and unicompartmental knee replacement. *Bone Joint J* 2013; 95: 1490–1496.
4. Fujita K, Makimoto K and Hotokebuchi T. Qualitative study of osteoarthritis patients' experience before and after total hip arthroplasty in Japan. *Nurs Health Sci* 2006; 8: 81–87.
5. Montin L, Suominen T and Helena L. The experiences of patients undergoing total hip replacement. *J Orthop Nurs* 2002; 6: 23–29.
6. Grant S, St John W and Patterson E. Recovery from total hip replacement surgery: "It's not just physical". *Qual Health Res* 2009; 19: 1612–1620.
7. Gustafsson BÅ, Ekman SL, Ponzer S, et al. The hip and knee replacement operation: An extensive life event. *Scand J Caring Sci* 2010; 24: 663–670.
8. Marcinkowski K, Wong VG and Dignam D. Getting back to the future: A grounded theory study of the patient perspective of total knee joint arthroplasty. *Orthop Nurs* 2005; 24: 202–209.
9. Woolhead GM, Donovan JL and Dieppe PA. Outcomes of total knee replacement: A qualitative study. *Rheumatology (Oxford)* 2005; 44: 1032–1037.
10. Showalter A, Burger S and Salyer J. Patients' and their spouses' needs after total joint arthroplasty: A pilot study. *Orthop Nurs* 2000; 19: 49–57, 62.
11. Fitzerald J, Orav E, Lee T, et al. Patient quality of life during the 12 months following joint replacement surgery. *Arthritis Rheum* 2004; 51: 100–109.
12. Barksdale P and Backer J. Health-related stressors experienced by patients who underwent total knee replacement seven days after being discharged home. *Orthop Nurs* 2005; 24: 336–342.
13. Strauss A and Corbin J. *Handbook of qualitative research* [Internet]. Thousand Oaks: SAGE, 1994. Chapter 17, Grounded theory methodology. [cited 2015 Sep 5]. Available from: http://cms.educ.ttu.edu/uploadedFiles/personnel-folder/lee-duemer/epsy-5382/documents/Grounded%20theory%20methodology.pdf.
14. Strauss A. *Qualitative analysis for social scientists*. New York: Cambridge University Press, 1987.
15. Guba E and Lincoln Y. *Handbook of qualitative research*. London: SAGE, 1994.
16. Patton M. *Qualitative Evaluation and Research Methods*. 2nd ed. Thousand Oaks, California: SAGE, 2001.
17. Ambert A, Adler P, Adler P, et al. Understand and evaluating qualitative research. *J Marriage Fam* 1995; 57: 879–893.
18. Creswell J and Miller D. Determining validity in qualitative inquiry. *Theory Pract* 2000; 39: 124–130.
19. Pablo P, Losina E, Phillips C, et al. Determinants of discharge destination following elective total hip replacement. *Arthritis & Rheum* 2004; 51: 1009–1017.
20. Heine J, Koch S and Goldie P. Patients' experiences of readiness for discharge following a total hip replacement. *Aust J Physiother* 2004; 50: 227–233.
21. Meredith A, Hudson H, Meys S, et al. Older adults' experiences regarding discharge from hospital following orthopaedic intervention: A metasynthesis. *Disabil Rehabil* 2012; 34: 267–278.
22. Baltes M and Carstensen L. The process of successful ageing. *Ageing Soc* 1996; 16: 397–422.
23. Gignac MA, Cott C and Badley EM. Adaptation to chronic illness and disability and its relationship to perceptions of independence and dependence. *J Gerontol B Psychol Sci Soc Sci* 2000; 55: P362–P372.
24. Ziden L, Wenestam C and Hansson-Scherman M. A life-breaking event: early experiences of the consequences of hip fracture for elderly people. *Clin Rehabil* 2008; 22: 801–811.
25. Gustafsson BA, Ponzer S, Heikkilä K, et al. The lived body and the perioperative period in replacement surgery: Older people's experiences. *J Adv Nurs* 2007; 60: 20–28.
26. Rastogi R, Davis AM and Chesworth BM. A cross-sectional look at patient concerns in the first six weeks following primary total knee arthroplasty. *Health Qual Life Outcomes* 2007; 5: 48.
27. Jacobson AF, Myerscough RP, Delambo K, et al. Patients' perspectives on total knee replacement. *Am J Nurs* 2008; 108: 54–63; quiz 63.
28. Su HH, Tsai YF, Chen WJ, et al. Health care needs of patients during early recovery after total knee-replacement surgery. *J Clin Nurs* 2010; 19: 673–681.
29. Loft M, McWilliam C and Ward-Griffin C. Patient empowerment after total hip and knee replacement. *Orthop Nurs* 2003; 22: 42–47.