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Factors that shape the patient's hospital experience and satisfaction with lower limb arthroplasty: an exploratory thematic analysis

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ABSTRACT

Objective: Large scale surveys can play an important role in identifying best clinical practice. The findings of such surveys can however be difficult to contextualize in terms of making practical suggestions for service improvement. Previous studies have shown that hospital experience can influence overall satisfaction with outcome of lower limb arthroplasty but little is known about the factors that shape a positive hospital experience. The aim of this study was therefore to undertake a more in-depth exploration of the patient responses associated with their hospital experience.

Design: A mixed methods (quan-QUAL) approach.

Setting: Large regional teaching hospital

Participants: 216 patients who had completed a post-operative postal questionnaire at twelve months following total knee or total hip arthroplasty.

Outcome measures: Overall satisfaction with outcome of surgery, whether to recommend procedure to another and rating of their hospital experience were recording using a Likert scale. Free text comments on the best and worst aspects of their hospital stay were evaluated using qualitative thematic analysis.

Results: Overall, 77% of patients were satisfied with their surgery, 79% reported a good-excellent hospital experience and 85% would recommend surgery to another. Qualitative analysis revealed clear themes relating to communication, pain relief and the process experience. Comments on positive aspects of the hospital experience were relating to feeling well informed and consulted about their care. Comments on the worst aspects of care were related to being made to wait without explanation, moved to different wards and when they felt invisible to the healthcare staff caring for them.

Conclusions: Positive process experiences were closely linked to effective patient-health professional interactions. Within arthroplasty services, the patient experience of healthcare could be enhanced by further attention to concepts of patient-centred care and avoidance of 'boarding' procedures.

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ARTICLE SUMMARY

Strengths and limitations of this study:

- Provides greater insight into what patient like and dislike about their hospital experience
- Sufficient sample size to achieve data saturation
- Limited capacity to check meaning with respondents

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INTRODUCTION

In today's healthcare environment, resource utilization is driven by patient outcomes. Consequently, outcome metrics play an increasingly important role in identifying best clinical practice[1]. Choosing the most suitable measures that provide meaningful information for patients, clinicians and service commissioners can however be difficult[2].

The 'Friends and Family' test has recently been introduced across the NHS[3], with the intention of providing a standardized approach to collecting patient feedback on the care and treatment provided. The aim of collecting this data is to inform approaches to optimize care, and provide patients with information to support decision making.

A previous study identified that responses to the Friends and Family test are mediated by three factors: meeting pre-operative expectations, adequate pain management and a pleasant hospital experience [4]. Patient experience, together with clinical effectiveness and patient safety – is one of the so-called 'Three Pillars of Quality'[5]. Consequently, provision of a high quality patient experience is now considered to be a key component of patient care[6] . However, maintaining and improving the quality of hospital care has been shown to be a particular challenge[7]. In 2013, only 27% of patients in England rated their hospital experience as 'very good '[8]. Therefore in order to ensure that quality improvement initiatives are focused on the areas where they are most needed, patient feedback on their hospital experiences is required.

Previous studies of hospital experience have been limited by the lack of a standardized approach[9]. A number of issues have been highlighted[10-11] which include confusion over the definition of the term 'experience' as well as the validity and reliability of instruments which are designed to measure the patient experience; it is therefore difficult to generalize findings. Elements of the hospital experience, such as patient satisfaction are often elicited through the use of surveys[12], which, whilst having the advantages of being able to administer to large sample sizes, do not necessarily offer the opportunity for the patient to give their point of view. A ready example of this is the previous use of statistical modeling to determine factors that predict positive 'friends and family test' responses following lower limb arthroplasty[4]. Though useful in identifying factors which influence outcome, the results are difficult to contextualize in terms of making practical improvements to arthroplasty services. Surveys are less likely to identify negative experiences and have been criticized for their lack of discriminant ability[13]. Therefore, identification of areas for service improvement is unlikely to be achieved through large scale simplistic surveys such as the Friends and Family test.

Measuring patient reported quality of care on its own is unlikely to change clinical practice. In order to improve care, there is a need for sustained and targeted intervention[14-15]. Within lower limb arthroplasty services, hospital experience has previously been shown to be a significant predictor of satisfaction with the outcome of surgery and likelihood of recommending surgery to a friend or family member[4]. There has been no work however to determine which factors shape a patients satisfaction with their hospital experience. Therefore, understanding of what patients like and do not like about their hospital experience can help provide insight into where service improvements could have the potential to improve the patient experience, their satisfaction and ultimately their friends and family test recommendation response.

The aim of this study was therefore to undertake a more in-depth exploration of the patient responses associated with experience metric and specifically to identify issues that are associated with a positive or negative patient experience.

METHODS

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Study design and sample

We employed a mixed methods (quan-QUAL) approach utilising quantitative summary statistics and qualitative thematic evaluation of patient feedback to investigate the factors with influence the patient's satisfaction with the outcome of their hip or knee surgery and willingness to recommend the procedure to another.

A random sample of patient survey responses was obtained from the research database of a large regional teaching hospital. The study centre is the only hospital receiving adult referrals for a predominantly urban population of around 850 000[16]. Data had been collected through informed consent for inclusion in the database for which regional ethical approval had been obtained (11/AL/0079). Surgical procedures were carried out by multiple consultant orthopaedic surgeons and their supervised trainees. All data was collected independently from the clinical team by the arthroplasty outcomes research unit of the associated university. Data was sampled until saturation of themes was achieved. The final sample (n = 216) represented 5% of all those who underwent total lower limb arthroplasty during a 2 year period.

Data capture

This study employed retrospective evaluation of prospectively collected data. Post-operative postal questionnaires were administered at twelve months following total hip or total knee arthroplasty. Participants were included in the analysis if they had undergone either hip or knee arthroplasty and had returned the postal questionnaire. Overall satisfaction with outcome was recorded on a 4-point scale (very satisfied, satisfied, uncertain, dissatisfied) and subsequently dichotomized into 'satisfied' (very satisfied or satisfied) and 'not satisfied' (uncertain, dissatisfied). Responses to the question 'would you recommend this operation to someone else?' were recorded on a 5-point Likert scale (definitely yes, possibly yes, probably not, certainly not, unsure) and subsequently dichotomized into either 'recommend' (definitely yes or possibly yes) or 'not recommend' (certainly not, probably not, unsure). Patient were also asked to rate their overall hospital experience as either 'excellent', 'very good', 'good', 'fair', 'poor' or 'unknown'.

Patients were also invited to respond in free text as to the best and worst aspects of their care; this individual response data was used for qualitative analysis. Data was included until saturation of themes was achieved.

Data analysis

Initial data analysis was by quantitative methodology to measure satisfaction and willingness to recommend the procedure to another. Data are presented as percentages and between group comparisons analysed by Pearson's Chi Square test. Significance was accepted at $p = 0.05$.

In order to enhance credibility, two researchers (CE and JVL) individually undertook the initial qualitative analysis. JVL is a senior lecturer in Physiotherapy, has a PhD in exploring outcomes in lower limb arthroplasty as well as over 25 years experience of researching in this area. JVL teaches post-graduate courses in research methods including qualitative methodologies. CE undertook the work as part of an MSc in Physiotherapy and had received training in qualitative research. Both researchers were independent of the direct care teams and had previous experience of both qualitative research and evaluation of outcomes in orthopedics. The free text patient responses were read repeatedly (familiarisation) and preliminary themes identified using NVivo (v10) software. Data were then sorted and synthesised by theme, bringing similar concepts identified by each researcher together (thematic charting). Data were analyzed using an interpretive phenomenological approach where responses were coded and synthesized into conceptual themes. Through interpretation of the response to the questions of what was good and less good about their

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hospital experience, it was hoped to be able to identify how patients understand their hospital experience. The patient's language was maintained as far as possible to maintain the intended context. In order to enhance the trustworthiness of the qualitative analysis, credibility of the thematic analysis was addressed through peer scrutiny by a third researcher (DFH) at all stages of the analysis phase.

RESULTS

A random sample of 216 patients (126 following hip arthroplasty and 90 patient post knee arthroplasty) who received their operation between January 2010 and December 2012 was extracted; this represented 5% of the total lower limb arthroplasty throughput over that timeframe (table 1).

Table 1 – satisfaction data

	Total population	Hip arthroplasty	Knee arthroplasty	p
n	216	126	90	
Satisfied with outcome	76.8%	81.7%	70%	0.044[†]
Would recommend	85%	93%	77%	0.001
Excellent to good hospital experience	79%	83%	72%	0.049

[†]Pearson's Chi Square

Overall, the majority of patients were satisfied with the results of lower limb arthroplasty. Significantly more patients were satisfied following hip arthroplasty than knee arthroplasty (Chi-sq 3.9, $p = 0.04$, table 1) and would be likely to recommend the procedure to another (chi-square 10.1, $p = 0.001$). 96.9% of satisfied patients would recommend the procedure to another whereas 46.0% of unsatisfied patients would recommend the procedure (Chi-sq, $p < 0.001$, table 2). A significantly smaller proportion of patients undergoing knee arthroplasty rated their hospital experience as excellent – good (chi-square 3.8, $p = 0.049$) compared to those undergoing hip arthroplasty.

Table 2 Chi Square data table satisfaction and recommendation responses

	Recommend	Not recommend	
Satisfied	161	5	166
unsatisfied	27	23	50
	188	28	216

Qualitative analysis highlighted that 2 codes, communication and pain, stood out as separate entities. The remaining responses could be grouped as 'process experience'. This comprised 2 further subthemes; the quality of care received (staff attitudes, doctors, nursing care and physiotherapy) and the hospital environment (patient logistics, discharge processes and ward cleanliness).

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Figure 1 – Major themes and subthemes identified. [Insert Figure 1 here]
Hierarchy plot demonstrates the relationship between key findings. Communication, pain and the experience of the patient journey through arthroplasty services were 3 distinct themes. The process experience theme summarised 2 distinct but inter-related subthemes as the physical environment and logistical processes experienced during the hospital stay and the perception as to the quality of the care received.

The 3 major themes were highly reflected throughout the patient responses, and some inter-relationship was also clearly evident. Specific patient feedback examples, reported verbatim, follow to illustrate the major findings.

1. Communication

Patients reported communication to be very important to their experience of joint replacement. This encompasses the entire process of care form initial pre-admission letters to post-operative clinic visits. The major theme was that patients wanted to feel listened to; this was likely to enhance satisfaction even in cases of poor outcome, whereas a feeling that their views had not been considered was associated with dissatisfaction regardless of the clinical outcome.

Two broad threads emerged from the communication code. Positive reports of the hospital experience included: feeling well prepared for the process and that they received on-going updates relevant to their care enhanced their experience.

> "*Everything was explained fully and questions answered on the operation. I left the hospital with a higher regard for all the staff and administration of the hospital*".

Conversely, negative reports of the hospital experience were reported when communication was lacking or didn't prepare the patient for the eventual experience.

> "*None of the nurses or physiotherapists (on the ward) had been informed about my shoulder problem. I am still in pain with my shoulder, it is a great limitation*"

> "*The doctors never once explained to me what was going on all they said was your getting there, god only knows where there term for there was….They spoke in doctors terms of whish I never understood one bit"*

2. Pain

Experience of pain featured strongly in patient's reports. Joint pain is the primary indication for arthroplasty surgery, thus the patients are expected to have experienced high levels of chronic pain prior to surgery. The pain theme identified from the patient responses however reflects post-operative pain. Satisfaction, for some patients, appeared to be related to the experience of post-operative pain in relation to pre-operative expectations. The meeting of expectations (or not) was in some cases, significant enough this to be report ed as either the most positive or negative aspects of their hospital experience.

> "*Having had both knees replaced I am a little disappointed in the final result! I was told I would be pain free! This is not the case*."

> "*Not having any pain after the op was the best thing about the surgery, which was not expected, which proves how the surgeons are fantastic in this very difficult operation also the anaesthetics, which I from time to time think how lucky I am to be able to walk & golf*."

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3. Process Experience

As noted, this theme is a composite of 2 distinct, but related, subthemes

Subtheme 1 – the hospital environment

Each of the responses relating to being moved around made reference to the negative impact on the patient: feeling more vulnerable, loss of power, and lack of communication, either between health staff or with patients and families.

> *"Being moved to a transplant ward from orthopaedics…strange unknown nurses etc – became disoriented – other patients not from orthopaedics – put back my progress."*

> "*Having been moved from one ward to another my consultant had trouble finding me on Monday morning and my notes were lost*"

The core insight remains similar to that from communication and waiting: that a little information could go a long way to resolving the effect of the structural inequality on the patient.

Waiting was a frequent thread in the process experience theme. This focused around the day of surgery, and was often referred to as the single worst aspect of the care received.

> "*I had been told I was first on list then I was last (3.30pm). I had no fluid intake for 9 hours and the anaesthetist couldn't find a vein – this was worse than any pain in my hip*"

> "*I had to sit in a small room for six hours not knowing if a bed would be available – extremely stressful – in fact when I arrived in the anaesthetic room two hours later the anaesthetist commented on how high my blood pressure was – I understand why this system is used but feel there is too much stress put on staff and patients…*"

The latter example highlights some expectation or insight on the part of the individual as to the necessities of waiting for a surgical slot, but this does not seem to influence their anxiety or stress during the waiting period. Clearly, in this example, the experience was memorable enough to stand out and be reported some 12 months following the procedure.

Subtheme 2 – the quality of care

The most frequent comment across both sets of patients (satisfied and not satisfied) related to the quality of care received. Comments relating to staff attitude encompassed all professions and staff grades. There was an even balance amongst the responses between positive and negative attitudes.

> "*Everyone was so kind from the surgeons down to the cleaners*"

> "*However, all staff – cleaners, those that served the food and the nursing staff were pleasant and approached the patients in a nice way*"

> "*My treatment in admission was brusque in the extreme*".

> "*We were just numbers on a conveyor belt*"

These examples demonstrate the spread of positive comments across medical and care professions. However, the negative elements appeared to refer more commonly to nurses and nursing care.

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Patient comments as to nurse attitudes often referred to time constraints for care, and even positive experiences of nursing were often qualified with comments on the nurse being overworked:

> "*The nursing staff are under so much pressure I feel sorry for them. This did not take away from the way I was looked after which I cannot fault in any way*"

DISCUSSION

Though significantly more patients were satisfied post hip arthroplasty than knee arthroplasty, no differences were detected in the thematic responses between THA and TKA. This perhaps reflects the focus of the patient in commenting on their experience of the hospital stay, which is markedly similar for these operations; as opposed to the rehabilitation regime and post-operative recovery timeframes.

In this analysis, three key domains (pain management, communication and the hospital experience) were identified. These three domains were reflected in both positive and negative comments and reflect previous statistical regression models which have shown that post-operative pain, meeting of pre-operative expectations of outcome and the overall experience of the episode of care were the key factors in determining patient satisfaction with outcome – irrespective of clinical outcome.

Pain and communication are clear constructs, while the process experience theme is more complex to interpret. This analysis demonstrates that the hospital environment and the quality of care are primary themes in expressing the patient experience – and their subsequent reports of satisfaction. Key issues within the theme of environment were patient movement between wards (the so-called process of 'boarding' patients to different wards), stress and anxiety caused by long waits on the day of surgery and ward environment. Ward moves have been shown to place patients, and especially the frail and elderly, at risk of falls, delirium and present an infection control hazard[17-18]. Such problems place patients at increased risk of injury and mortality and leading to worse outcomes. The process of moving wards also has the potential to remove vulnerable patients from the supportive relationships which develop between patients and between patients and staff.

The most common focus of the patient report was the quality of care they received suggesting its relative importance in the process experience. In addition to its role in satisfaction, quality of care has been shown to be associated with patient reported health related quality of life at 1 year post surgery[19]. Nursing care was frequently targeted for comment, with many patients feeling as though staff lacked the time to provide quality care. Studies[20] have suggested that initiatives designed to increase the time that nursing staff spend in direct patient care result in improved patient safety although evidence in a specific orthopedic setting is lacking.

The themes of communication and process experience are closely linked, and both reflect the value of the patient-health professional interaction in ensuring a positive hospital experience. Patients were satisfied when they were felt well informed and consulted about their care. They were unsatisfied when they were made to wait without explanation, moved to different wards and when they felt invisible to the healthcare staff caring for them. This experience of the process of care clearly made a significant impact on many patients who were able to recall specific details of the days surrounding their surgery even at one year post surgery. These findings reflect key elements of the concept of patient-centered care[21]. A study of the patient-centered care model acute in-patient care showed that emotional support, co-ordination of care and physical comfort had the strongest influence on outcomes[22]. Whilst not specific to the orthopedic context, these findings lend support to our results which reinforce the value of involving the patient in the process of care.

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Patient satisfaction has increasingly been the focus of outcome metrics in healthcare. Many studies have highlighted the influence of factors such as function and pain[23] and despite developments in implant design[24] and surgical procedure[25] there has been relatively little improvement in satisfaction scores[26-27]. One possible reason is a lack of standardized approach to addressing satisfaction and the general lack of consideration of the role of the hospital experience. The Friends and Family test was introduced with the aim of providing a mechanism by which patients feedback could be used for continuous improvement and reinforcement of standards of care[3]. The current study reinforces previous findings[4] which identified the key role that satisfaction with the hospital experience plays in overall satisfaction and the likelihood of recommending the procedure to another. The results provide further context to the theme of hospital experience, highlighting how the delivery of healthcare can influence the patient perception of the episode of care, beyond the clinical outcomes and has identified areas for modifying the process of care with a view to enhancing the patient experience of healthcare.

The primary limitations of this study is that there was no further communication with the patients who responded, thus there was no opportunity for participants to check understanding or clarify meaning and indeed has only the participants' perspective of events. Triangulation and/or member checking can also increase the confirmability and credibility of the data[28] however opportunities for triangulation with other sources were limited in this instance. The key issue for the credibility of qualitative data however is its trustworthiness. One advantage of the use of postal questionnaires with open ended questions is that larger samples can be collected whilst still providing the opportunity for the patient to offer their unique perspective. Completing the feedback at home encourages honesty in reporting. The sample size is relatively large for a qualitative study with an age and gender balance consistent for the UK lower limb arthroplasty population. The satisfaction scores reported in this sample however are slightly lower than those previously reported [4]. This suggests a possible selection bias in the sample, despite random selection. There were no differences however arising in the themes arising from the free text comments between those who were satisfied and those who weren't.

CONCLUSION

This study helps contextualize the factors that influence patient's satisfaction with hospital care, identifying that processes of care are central to the likelihood of recommending lower limb arthroplasty to another. Optimizing the areas of service delivery that are associated with negative responses (as highlighted here) may materially enhance operation outcome metrics through friend and family test scores. Positive process experiences were linked with building and maintaining of effective patient-health professional interactions. The results suggest that within arthroplasty services, the patient experience of healthcare could be enhanced by further attention to concepts of patient-centred care and avoidance of 'boarding' procedures.

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COMPETING INTERESTS

None

CONTRIBUTORS

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JVL, DFH, DJM and CRH devised the study. DJM collected the data and contributed to the interpretation of the results. JVL and CE undertook the qualitative analysis. JVL and DFH undertook the quantitative analysis and wrote the first draft. CRH and CE contributed to the manuscript revision.

DATA SHARING

No additional data available

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REFERENCES

[1] Brinker MR, O'Connor DP. Stakeholders in outcome measures: review from a clinical perspective. *Clin Orthop Relat Res* 2013;471:3426-3436. doi: 10.1007/s11999-013-3265-3.

[2] O'Connor D, Brinker, M. Challenges in outcome measurement: clinical research perspective. *Clin Orthop Relat Res* 2013; 471:3496-3503. doi: 10.1007/s11999-013-3194-1.

[3] NHS England. *The Friends and Family Test.* NHS England 2014. Available from http://www.england.nhs.uk/wp-content/uploads/2014/07/fft-imp-guid-14.pdf (accessed 03 March 2015)

[4] Hamilton DF, Lane JV, Gaston P, *et al*. Assessing outcomes using a single question: the netpromoter score. *J Bone Joint Surg Br 2014*;96-B: 622-628. doi: 10.1302/0301-620X.96B5.32434.

[5] Doyle C, Lennox L , Bell D. A systematic review of evidence on the links between patient experience and clinical safety and effectiveness. *BMJ Open* 2013;3:1. doi: 10.1136/bmjopen-2012-001570.

[6] Siriwardena A, Gillam S. Patient perspectives on quality. *Qual Prim Care 2014;* 22:11-15.

[7] Right Care. *Productivity and prevention (QIPP): the NHS atlas of variation in healthcare: reducing unwarranted variation to increase value and improve quality*. United Kingdom: Right Care, 2011. http://www.rightcare.nhs.uk/atlas/qipp_nhsAtlas-LOW_261110c.pdf

[8] Care Quality Commission. *Inpatient Survey 2013: National Summary*. CQC, 2013. https://www.cqc.org.uk/sites/default/files/inpatient_survey_national_summary.pdf (Accessed 11th Feb 2015)

[9] Jones E, Wainwright T, Foster J, *et al*. A systematic review of patient reported outcomes and patient experience in enhanced recovery after orthopaedic surgery. *Ann R Coll Surg Engl* 2014;96:89-94. doi: 10.1308/003588414X13824511649571.

[10] Beattie M, Lauder W, Atherton I, *et al*. Instruments to measure patient experience of health care quality in hospitals: a systematic review protocol. *Syst Rev* 2014;3:4. Doi: 10.1186/2046-4053-3-4.

[11] Edwards KJ, Duff J, Walker K. What really matters? A multi-view perspective of one patients hospital experience. *Contemp Nurse* 2014; 5130-5157.

[12] Graham B, Green A, James M, *et al*. Measuring patient satisfaction in orthopaedic surgery. *J Bone Joint Surg Am* 2015;97:80-84.

[13] Tsianakas V, Maben J, Wiseman T, *et al*. Using patients' experiences to identify priorities for quality improvement in breast cancer care: patient narratives, surveys or both? *BMC Health Serv Res* 2012;12:271.

[14] Ahmed F, Burt J, Roland M. Measuring Patient Experience: Concepts and Methods. *Patient* 2014;7:235-241.

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[15] Coulter A, Locock L, Ziebland S, *et al*. Collecting data on patient experience is not enough: they must be used to improve care *BMJ* 2014;348:g2225

[16] National Records of Scotland. *Council Area Profiles*. Edinburgh: National Records of Scotland http://www.gro-scotland.gov.uk/statistics/theme/population/projections/sub-national/2010-based/tables.html
(accessed 16th September 2014)

[17] McCusker J, Cole M, Abrahamowicz M, *et al*.Environmental risk factors for delirium in hospitalized older people. *J Am Geriatr Soc 2001*;49:1327–34.

[18] McMurdo M, Witham M. Unnecessary ward moves - bad for patients; bad for healthcare systems. *Age Ageing* 2013;42:555-556.

[19] Baumann C, Rat A, Mainard D, *et al*. Importance of patient satisfaction with care in predicting osteoarthritis-specific health-related quality of life one year after total joint arthroplasty. *Quality Life Re 2011;*20:1581-8.

[20] Wright S, McSherry W. A systematic literature review of Releasing Time to Care: The Productive Ward. *J Clin Nurs* 2013;22:1361-1371

[21] The Picker Institute. 2015. *Principles of Patient Centred Care.* Picker Institute, 2015. http://www.pickereurope.org/about-us/principles-of-patient-centred-care/ (accessed 24 April 2015)

[22] Rathert C, Williams E, McCaughey D, *et al*. Patient perceptions of patient-centred care: empirical test of a theoretical model. *Health Expect* 2015;18;199-209

[23] Jacobs C, Christensen C. Factors influencing patient satisfaction two to five years after primary total knee arthroplasty. *J Arthroplasty* 2014;29;1189-1191.

[24] Hamilton DF, Burnett R, Patton JT, *et al*. Implant design influences patient outcomes following total knee arthroplasty: a prospective double blind randomised controlled trial. *Bone Joint J* 2015;97:64-70.

[25] Lindgren, J, Wretenberg, P, Kärrholm, J, *et al* 2014. Patient-reported outcome is influenced by surgical approach in total hip replacement: a study of the Swedish Hip Arthroplasty Register including 42,233 patients. *Bone Joint J* 2014;96-B:590-596

[26] Maratt, J, Lee, Y, Lyman, S, & Westrich, G 2015. Predictors of Satisfaction Following Total Knee Arthroplasty. J Arthroplasty Published Online First 30 Jan 2015 doi:10.1016/j.arth.2015.01.039

[27] Nam D, Nunley R, Barrack, R. Patient dissatisfaction following total knee replacement: a growing concern? *Bone Joint J* 2014;96-B:96-100.

[28] Shenton AK. Strategies for ensuring trustworthiness in qualitative research projects*. Education for Information* 2004;22:63-75
http://www.angelfire.com/theforce/shu_cohort_viii/images/Trustworthypaper.pdf (accessed 23 March 2015)

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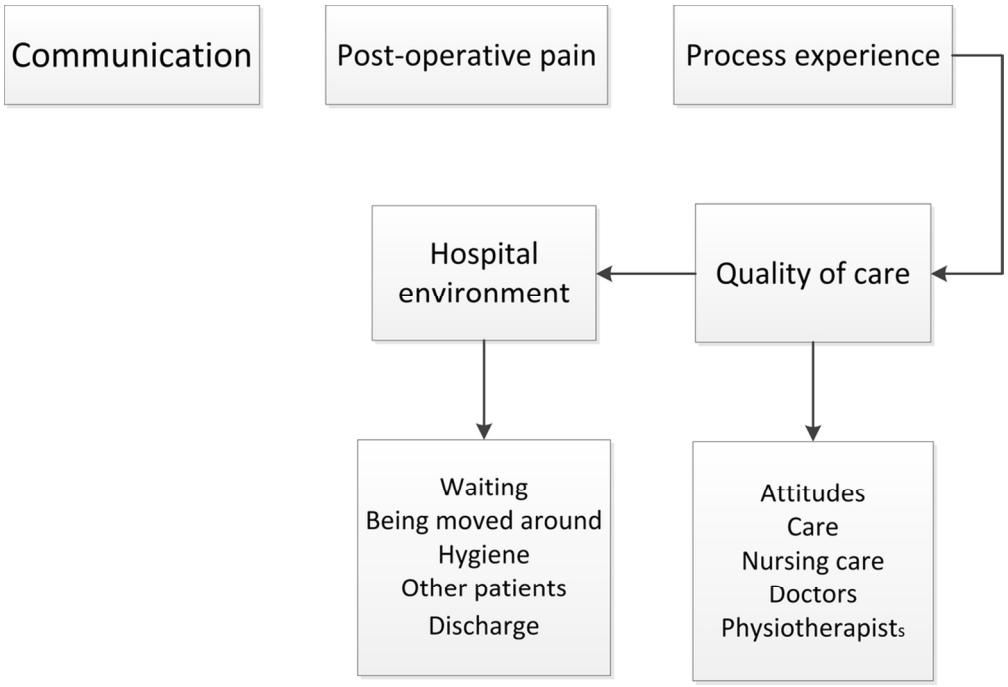

Figure 1 – Major themes and subthemes identified.
Hierarchy plot demonstrates the relationship between key findings. Communication, pain and the experience of the patient journey through arthroplasty services were 3 distinct themes. The process experience theme summarised 2 distinct but inter-related subthemes as the physical environment and logistical processes experienced during the hospital stay and the perception as to the quality of the care received.
102x69mm (300 x 300 DPI)

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Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

Developed from:
Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

YOU MUST PROVIDE A RESPONSE FOR ALL ITEMS. ENTER N/A IF NOT APPLICABLE

No. Item	Guide questions/description	Reported on Page #
Domain 1: Research team and reflexivity		
Personal Characteristics		
1. Inter viewer/facilitator	Which author/s conducted the inter view or focus group?	n/a
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	Methods, p.5
3. Occupation	What was their occupation at the time of the study?	Methods, p.5
4. Gender	Was the researcher male or female?	n/a
5. Experience and training	What experience or training did the researcher have?	Methods, p.5
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	n/a
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	n/a
8. Interviewer characteristics	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	n/a
Domain 2: study design		
Theoretical framework		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Methods, p.5
Participant selection		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Methods, p.5
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	Methods, p.5
12. Sample size	How many participants were in the study?	Results, p.6

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13. Non-participation	How many people refused to participate or dropped out? Reasons?	n/a
Setting		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	n/a
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	n/a
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Results, p.6
Data collection		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	n/a
18. Repeat interviews	Were repeat inter views carried out? If yes, how many?	n/a
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	n/a
20. Field notes	Were field notes made during and/or after the inter view or focus group?	n/a
21. Duration	What was the duration of the inter views or focus group?	n/a
22. Data saturation	Was data saturation discussed?	Methods, p.5
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	n/a
Domain 3: analysis and findings		
Data analysis		
24. Number of data coders	How many data coders coded the data?	Methods, p.5
25. Description of the coding tree	Did authors provide a description of the coding tree?	N/A
26. Derivation of themes	Were themes identified in advance or derived from the data?	Methods, p.5
27. Software	What software, if applicable, was used to manage the data?	NVivo, p.5
28. Participant checking	Did participants provide feedback on the findings?	Strengths and limitations, p.10
Reporting		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Results, p 7-9
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Relationship to existing knowledge, p9-10
31. Clarity of major themes	Were major themes clearly presented in the findings?	Results, p7-8 and figure 1
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Discussion, p9-10

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Factors that shape the patient's hospital experience and satisfaction with lower limb arthroplasty: an exploratory thematic analysis

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Factors that shape the patient's hospital experience and satisfaction with lower limb arthroplasty: an exploratory thematic analysis

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Abstract

Objective: It is generally accepted that the patients' hospital experience can influence their overall satisfaction with the outcome of lower limb arthroplasty, however little is known about the factors that shape the hospital experience. The aim of this study was to developing an understanding of what patients like and do not like about their hospital experience with a view to providing insight into where service improvements could have the potential to improve the patient experience, their satisfaction and whether they would recommend the procedure.

Design: A mixed methods (quan-QUAL) approach.

Setting: Large regional teaching hospital

Participants: 216 patients who had completed a post-operative postal questionnaire at twelve months following total knee or total hip arthroplasty.

Outcome measures: Overall satisfaction with outcome of surgery, whether to recommend procedure to another and rating of patient hospital experience. Free text comments on the best and worst aspects of their hospital stay were evaluated using qualitative thematic analysis.

Results: Overall, 77% of patients were satisfied with their surgery, 79% reported a good-excellent hospital experience and 85% would recommend surgery to another. Qualitative analysis revealed clear themes relating to communication, pain relief and the process experience. Comments on positive aspects of the hospital experience were relating to feeling well informed and consulted about their care. Comments on the worst aspects of care were related to being made to wait without explanation, moved to different wards and when they felt invisible to the healthcare staff caring for them.

Conclusions: Positive patient experiences were closely linked to effective patient-health professional interactions and logistics of the hospital processes. Within arthroplasty services, the patient experience of healthcare could be enhanced by further attention to concepts of patient-centred care. Practical examples of this include more focus on developing staff-patient communication and the avoidance of 'boarding' procedures.

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ARTICLE SUMMARY

Strengths and limitations of this study:

• This study provides greater insight into what patients like and dislike about their hospital experience which can be directly translated into practical strategies for clinical service improvements.

• The sample is relatively large for a qualitative study with sufficient size to achieve data saturation.

• The study evaluated patient free text responses to open ended questions. The primary limitation is that there was no further communication with the patients who responded, thus no opportunity for participants to clarify their comments.

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INTRODUCTION

In today's healthcare environment, resource utilization is driven by patient outcomes. As such, outcome metrics play an increasingly important role in moderating and developing clinical practice [1]. Choosing suitable measures that provide meaningful information for the wide range of stakeholders can however be difficult [2].

The 'Friends and Family' test has recently been introduced across the NHS[3], with the intention of providing a standardized approach to collecting patient feedback on the care and treatment provided. The aim of collecting such data is to inform approaches to maximizing improvements in care, as well as providing patients with information to support decision making. A previous study using lower limb arthroplasty as a model identified that responses to the Friends and Family test are mediated by three factors: meeting pre-operative expectations, adequate pain management and a pleasant hospital experience[4].

Patient experience, together with clinical effectiveness and patient safety, is one of the so-called 'Three Pillars of Quality'[5]. Consequently, provision of a high quality patient experience is now considered to be a key component of quality patient care[6] . However, maintaining and improving quality of hospital care has been proven to be a particular challenge[7]. In 2013, only 27% of patients in England rated their hospital experience as 'very good ' [8]. Therefore in order to ensure that quality improvement initiatives are focused on the areas where they are most needed, patient feedback on their hospital experiences is required.

Previous studies of hospital experience have been limited by the lack of a standardized approach[9]. A number of issues have been highlighted[10-11] which include confusion over the definition of the term 'experience' as well as the validity and reliability of instruments which are designed to measure the patient experience. It is therefore difficult to generalize findings across settings and contexts and there is a lack of literature which focusses on the orthopedic in-patient experience. Elements of the hospital experience, such as patient satisfaction are often elicited through the use of surveys[12], which, whilst having the advantages of being able to administer to large sample sizes, do not necessarily offer the opportunity for the patient to give their point of view. One example is the Friends and Family Test which has been used previously[4] as part of a statistical modeling methodology to highlight factors that predict patient satisfaction following lower limb joint replacement. Whilst useful in identifying factors which influence satisfaction with outcome, the results are difficult to contextualize in terms of making improvements to the patient's journey through arthroplasty services. Furthermore, surveys are less likely to identify negative experiences and have been criticized for their lack of discriminant ability[13]. Therefore, identification of areas for service improvement is unlikely to be achieved through large scale simplistic surveys such as the Friends and Family test.

Measuring patient reported quality of care on its own is unlikely to change clinical practice. In order to improve care, there is a need for sustained and targeted interventions[14-15]. Within lower limb arthroplasty services, hospital experience has previously been shown to be a significant predictor of satisfaction with the outcome of surgery and likelihood of recommending surgery to a friend or family member[4]. There has been no work however to determine which factors shape a patients satisfaction with their hospital experience. Therefore developing an understanding of what patients like and do not like about their hospital experience may help provide insight into where service improvements could have the potential to improve the patient experience, their satisfaction and ultimately their friends and family test recommendation response.

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The aim of this study was therefore to undertake a more in-depth exploration of the patient responses associated with experience metric and specifically to identify issues that are associated with a positive or negative patient experience.

METHODS

Study design and sample

We employed a mixed methods (quan-QUAL) approach utilising quantitative summary statistics and qualitative thematic evaluation of patient feedback post arthroplasty to investigate the factors with influence the patient's satisfaction with the outcome and willingness to recommend the procedure to another.

A sample of patient survey responses was obtained from the research database of the elective orthopaedic unit of a large regional teaching hospital. The study centre is the only hospital receiving adult referrals for a predominantly urban population of around 850 000[16]. The elective unit has 52 inpatient beds across 2 specialist orthopaedic wards with specialist nursing and allied health professional staff. Surgical procedures were carried out by multiple consultant orthopaedic surgeons and their supervised trainees. Data had been collected through informed consent for inclusion in the database for which regional ethical approval had been obtained (11/AL/0079). All data was collected independently from the clinical team by the arthroplasty outcomes research unit of the associated university.

Data capture

This study employed retrospective evaluation of prospectively collected data. Post-operative postal questionnaires were administered at twelve months following surgery. As part of the post-operative survey, patients were asked specific questions as to their satisfaction following joint replacement. Patients were asked to indicate their overall satisfaction with outcome on a 4-point scale (very satisfied, satisfied, uncertain, dissatisfied); whether they 'would recommend this operation to someone else?' on a 5-point Likert scale (definitely yes, possibly yes, probably not, certainly not, unsure); and to rate their overall hospital experience as either 'excellent', 'very good', 'good', 'fair', 'poor' or 'unknown'. Patients were also invited to respond in free text as to the best and worst aspects of their care; this individual response data was used for qualitative analysis.

Data analysis

Initial data analysis was by quantitative methodology to measure satisfaction and willingness to recommend the procedure to another. Responses to the Likert scale satisfaction questions were dichotomized into positive or negative responses for analysis. As per the methodology for the NHS friends and family test, 'not sure' responses were considered as negative.[REFS] Data are presented as percentages and between group comparisons analysed by Pearson's Chi Square test. Significance was accepted at $p = 0.05$.

Free text data were transcribed from the handwritten responses, using NVivo (v10) software, to facilitate a staged approach to analysis. Free text data were analyzed using an interpretive phenomenological approach where responses were coded and synthesized into conceptual themes. Through interpretation of the response to the questions of what was good and less good about their hospital experience, it was hoped to be able to identify how patients understand their hospital experience. The free text patient responses were read repeatedly (familiarisation) and preliminary themes identified. Data were then sorted and synthesised by theme, bringing similar concepts together (thematic charting). The patient's language was maintained as far as possible to maintain

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the intended context. In order to enhance the trustworthiness of the qualitative analysis, credibility of the thematic analysis was addressed through peer scrutiny at all stages of the analysis phase.

RESULTS

The database contained 4300 patient feedback forms from those who underwent hip or knee replacement between 2010 and 2013. We extracted a random 5% sample of responses as a meaningfully representative – yet logistically manageable – sample for thematic analysis. The selected data comprised 216 patients; 126 following hip arthroplasty and 90 patient post knee arthroplasty (table 1).

In the hip replacement cohort, average age was 69.1 (SD 12.6) years, 56% were female. In the knee replacement cohort, average age was 70.2 (SD 9.4) years, 57% were female. Length of hospital stay was a median 5 days in both groups.

Table 1 – satisfaction data

	Total population	Hip arthroplasty	Knee arthroplasty	p
N	216	126	90	
Satisfied with outcome	76.8%	81.7%	70%	0.044†
Would recommend	85%	93%	77%	0.001
Excellent to good hospital experience	79%	83%	72%	0.049

†Pearson's Chi Square

Overall, 76.8 % of patients were satisfied with the results of lower limb arthroplasty. Significantly more patients were satisfied following hip arthroplasty than knee arthroplasty (Chi-sq, $p = 0.04$, table 1) and would be likely to recommend the procedure to another (chi-square 10.1, $p = 0.001$). 96.9% of satisfied patients would recommend the procedure to another whereas 56.0% of unsatisfied patients would recommend the procedure (Chi-sq, $p < 0.001$, table 2). A significantly smaller proportion of patients undergoing knee arthroplasty rated their hospital experience as excellent – good (chi-square 3.8, $p = 0.049$) compared to those undergoing hip arthroplasty.

Table 2 Chi Square data table satisfaction and recommendation responses

	Recommend	Not recommend	
Satisfied	161	5	166
unsatisfied	27	23	50
	188	28	216

Qualitative analysis highlighted three interrelated codes (figure 1). . Two of these codes, communication and pain, stood out as separate entities. The remaining responses could be grouped as 'process experience'. This comprised 2 further subthemes; the quality of care received (staff attitudes, doctors, nursing care and physiotherapy) and the hospital environment (patient logistics, discharge processes and ward cleanliness). Analysis was conducted for the hip and knee responses

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separately. As the thematic responses were coded equally, we amalgamate these for reporting purposes

The 3 major themes were highly reflected throughout the patient responses, and some inter-relationship was also clearly evident. Specific patient feedback examples, reported verbatim, follow to illustrate the major findings.

1. Communication

Patients reported communication to be very important to their experience of joint replacement. This encompasses the entire process of care form initial pre-admission letters to post-operative clinic visits. The major theme was that patients wanted to feel listened to; positive communication was likely to enhance satisfaction with the hospital experience and overall outcome even in cases where the patient also reported poor physical outcomes.

Two broad threads emerged from the communication code. The patient feeling well prepared for the process and that they received on-going updates relevant to their care enhanced their experience.

> "*Everything was explained fully and questions answered on the operation. I left the hospital with a higher regard for all the staff and administration of the hospital*".

Conversely, when communication was lacking or didn't prepare the patient for the eventual experience, the result was dissatisfaction with the episode of care.

> "*None of the nurses or physiotherapists (on the ward) had been informed about my shoulder problem. I am still in pain with my shoulder, it is a great limitation*"

> "*The doctors never once explained to me what was going on all they said was your getting there, god only knows where there term for there was….They spoke in doctors terms of which I never understood one bit"*

2. Pain

Experience of pain featured strongly in patients' reports. Joint pain is the primary indication for arthroplasty surgery, thus the patients are expected to have experienced high levels of chronic pain prior to surgery. The pain theme identified form the patient responses however reflects post-operative pain. Satisfaction seems related to the experience of post-operative pain in relation to pre-operative expectations.

> "*Having had both knees replaced I am a little disappointed in the final result! I was told I would be pain free! This is not the case*."

> "*Not having any pain after the op was the best thing about the surgery, which was not expected, which proves how the surgeons are fantastic in this very difficult operation also the anaesthetics, which I from time to time think how lucky I am to be able to walk & golf*."

3. Process Experience

As noted, this theme is a composite of 2 distinct, but related, subthemes

Subtheme 1 – the hospital environment

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Each of the responses relating to being moved around made reference to the impact on the patient: feeling more vulnerable, loss of power, and lack of communication, either between health staff or with patients and families.

> Being moved to a transplant ward from orthopaedics…strange unknown nurses etc – became disoriented – other patients not from orthopaedics – put back my progress.
>
> "*Having been moved from one ward to another my consultant had trouble finding me on Monday morning and my notes were lost*"

The core insight remains similar to that from communication and waiting: that a little information could go a long way to resolving the effect of the structural inequality on the patient.

Waiting was a frequent thread in the process experience theme. This focused around the day of surgery, and was often referred to as the single worst aspect of the care received.

> "*I had been told I was first on list then I was last (3.30pm). I had no fluid intake for 9 hours and the anaesthetist couldn't find a vein – this was worse than any pain in my hip*"
>
> "*I had to sit in a small room for six hours not knowing if a bed would be available – extremely stressful – in fact when I arrived in the anaesthetic room two hours later the anaesthetist commented on how high my blood pressure was – I understand why this system is used but feel there is too much stress put on staff and patients…*"

The latter example highlights some expectation or insight on the part of the individual as to the necessities of waiting for a surgical slot, but this does not seem to influence their anxiety or stress during the waiting period. Clearly, in this example, the experience was memorable enough to stand out and be reported some 12 months following the procedure.

Subtheme 2 – the quality of care

The most frequent comment across both sets of patients related to the quality of care received. Staff attitude encompasses all professions and staff grades. There was an even balance amongst the responses between positive and negative attitudes.

> "*Everyone was so kind from the surgeons down to the cleaners*"
>
> "*However, all staff – cleaners, those that served the food and the nursing staff were pleasant and approached the patients in a nice way*"
>
> "*My treatment in admission was brusque in the extreme*".
>
> "*We were just numbers on a conveyor belt*"

These examples demonstrate the spread of positive comments across medical and care professions. However, the negative elements appear to refer more commonly to nurses and nursing care. Patient comments as to nurse attitudes often referred to time constraints for care, and even positive experiences of nursing were often qualified with comments on the nurse being overworked:

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"The nursing staff are under so much pressure I feel sorry for them. This did not take away from the way I was looked after which I cannot fault in any way"

DISCUSSION

Overall, 77% of patients were satisfied with their surgery, 79% reported a good-excellent hospital experience and 85% would recommend surgery to another. Though significantly more patients were satisfied following total hip arthroplasty (THA) than total knee arthroplasty (TKA), no differences were detected in the thematic responses between THA and TKA. Superior satisfaction outcomes for hip arthroplasty compared to knee arthroplasty are well described and it is generally accepted that that this is related to the increased physical demands and pain associated with knee arthroplasty [4, 17]. In this study 'clinical' outcome comments were not a common feature of the responses – and not driving satisfaction/dissatisfaction responses. Instead, general factors related to the hospital stay, logistics and general patient experience were most associated with measures of patient satisfaction. Interestingly, while satisfied patients were likely to recommend the procedure to another, unsatisfied patients were equally likely to recommend or not recommend the procedure. This perhaps suggests that the factors that made the patients dissatisfied with the outcome of surgery may not be related to the actual surgical procedure – as half would still recommend arthroplasty to another despite being dissatisfied themselves.
Patient satisfaction has increasingly been the focus of outcome metrics in healthcare. Many studies have highlighted the influence of factors such as function and pain [18] and despite developments in implant design[19] and surgical procedure[20] there has been relatively little improvement in satisfaction scores[21-22]. One possible reason is a lack of standardized approach to addressing satisfaction and the general lack of consideration of the role of the hospital experience.

In this analysis, three key domains (pain management, communication and the hospital experience) were identified. No one domain was dominant and it is likely they inter-relate to some degree, however they were identified through the qualitative process as distinct themes in the patient survey responses. These three domains were reflected in both positive and negative comments and reflect previous statistical regression models which have shown that post-operative pain, meeting of pre-operative expectations of outcome and the overall experience of the episode of care were the key factors in determining patient satisfaction with outcome – irrespective of clinical outcome [23].

Pain and communication are clear constructs, while the process experience theme is more complex to interpret. This analysis demonstrates that the hospital environment and the quality of care are primary themes in expressing the patient experience – and their subsequent reports of satisfaction. Key issues within the theme of environment were patient movement between wards (the so-called process of 'boarding' patients to different wards), stress and anxiety caused by long waits on the day of surgery and ward environment. The unit in which this study was conducted is typical of arthroplasty provision in the NHS, where dedicated wards exist within large acute hospitals. These wards are staffed by specialist nurses and physiotherapists and typically support 'early discharge schemes', all of which have been previously associated with enhanced patient satisfaction [24]. However, these wards also need to contribute to the overall hospital challenge of bed management and board patients in other departments to accommodate acute admissions. Ward moves have been shown to place patients, and especially the frail and elderly, at risk of falls, delirium and present an infection control hazard [25-26]. Such problems place patients at increased risk of injury and mortality and leading to worse outcomes. The process of moving wards also has the potential to remove vulnerable patients from the supportive relationships which develop between patients and between patients and staff.

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A common focus of the patients survey feedback was the quality of care they received suggesting its relative importance in the process experience. In addition to its role in determining patient satisfaction, quality of care has been shown to be associated with patient reported health related quality of life at 1 year post surgery [27]. Nursing care was also frequently targeted for comment, with many patients feeling as though staff lacked the time to provide quality care. Studies [28] have suggested that initiatives designed to increase the time that nursing staff spend in direct patient care result in improved patient safety although evidence in a specific orthopedic setting is lacking.

The themes of communication and process experience are closely linked, and both reflect the value of the patient-health professional interaction in ensuring a positive hospital experience. Patients were satisfied when they were felt well informed and consulted about their care. They were unsatisfied when they were made to wait without explanation, moved to different wards and when they felt invisible to the healthcare staff caring for them. This experience of the process of care clearly made a significant impact on many patients who were able to recall specific details of the days surrounding their surgery even at one year post surgery. These findings reflect key elements of the concept of patient-centered care [29]. A study of the patient-centered care model acute in-patient care showed that emotional support, co-ordination of care and physical comfort had the strongest influence on outcomes [30]. Whilst not specific to the orthopedic context, these findings lend support to our results which reinforce the value of involving the patient in the process of care.

The Friends and Family test was introduced with the aim of providing a mechanism by which patients feedback could be used for continuous improvement and reinforcement of standards of care [3]. The current study reinforces previous findings [4] which identified the important role that satisfaction with the hospital experience plays in overall satisfaction and the likelihood of recommending the procedure to another. The results provide further context to the theme of hospital experience, highlighting how the delivery of healthcare can influence the patient perception of the episode of care, beyond the clinical outcomes and has identified areas for modifying the process of care with a view to enhancing the patient experience of healthcare.

Strengths and limitations

The primary limitations of this study is that there was no further communication with the patients who responded, thus there was no opportunity for participants to check understanding or clarify meaning and indeed has only the participants' perspective of events. Triangulation and/or member checking can also increase the confirmability and credibility of the data [31] however opportunities for triangulation with other sources were limited in this instance. The key issue for the credibility of qualitative data however is its trustworthiness. One advantage of the use of postal questionnaires with open ended questions is that larger samples can be collected whilst still providing the opportunity for the patient to offer their unique perspective. Completing the feedback at home encourages honesty in reporting. The sample size is relatively large for a qualitative study with an age and gender balance consistent for the UK lower limb arthroplasty population. The satisfaction scores reported in this sample however are slightly lower than those previously reported [4]. This suggests a possible selection bias in the sample, despite random selection. There were no differences however arising in the themes arising from the free text comments between those who were satisfied and those who weren't.

Patient feedback was collated 1 year following the index procedure, thus it is possible that recall bias influences the patient's memory of the hospital experience, however this affected all patients equally, and is unlikely to unbalance the findings. That we evaluated data from a single post-operative time point results that we cannot comment as to whether patient's responses are consistent or change with time following surgery. A further limitation of this study is that the data we have is not linked at an individual level to the patient's demographics. As such we cannot stratify

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the data by factors that could potentially influence outcomes such as surgical complications (DVT/PE, dislocations, and infections) or patient factors such as number of comorbid conditions. However, our unit's rates for the major arthroplasty complications (DVT, infection, dislocation) are approximately 1% (in line with wider Scottish data), thus it is unlikely this exerts a troublingly large influence on our findings. Further, specific, studies are required to evaluate the influence of individual predictors (such as comorbidity) on the themes we highlight as being related to patient satisfaction.

CONCLUSION

This study provides context as to factor that influence the patient's satisfaction following lower limb joint arthroplasty and their likelihood to recommend the process to another. Pain relief, communication and the logistical processes of the hospital stay were the primary themes that emerged. The results suggest that within arthroplasty services, the patient experience of healthcare could be enhanced by further attention to concepts of patient-centred care. Practical examples of this include more focus on developing staff-patient communication and the avoidance of 'boarding' procedures.

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COMPETING INTERESTS

None

CONTRIBUTORS

JVL, DFH, DJM and CRH devised the study. DJM collected the data and contributed to the interpretation of the results. JVL and CE undertook the qualitative analysis. JVL and DFH undertook the quantitative analysis and wrote the first draft. CRH and CE contributed to the manuscript revision.

DATA SHARING

No additional data available

REFERENCES

[1] Brinker, M, & O'Connor, D 2013. Stakeholders in outcome measures: review from a clinical perspective. *Clinical Orthopaedics And Related Research*, 471, 11, pp. 3426-3436.

[2] O'Connor, D, & Brinker, M 2013. Challenges in outcome measurement: clinical research perspective. *Clinical Orthopaedics And Related Research*, 471, 11, pp. 3496-3503

[3] NHS England, 2014. The Friends and Family Test. [online] [Accessed 03 March 2015] Available from http://www.england.nhs.uk/wp-content/uploads/2014/07/fft-imp-guid-14.pdf

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[4] Hamilton DF, Lane JV, Gaston P. Patton JT, MacDonald D, Simpson AHRW, Howie CR. 2014. Assessing outcomes with a single metric. *Journal of Bone and Joint Surgery*, 96-B, pp 622-628.

[5] Doyle, C, Lennox, L, & Bell, D 2013. A systematic review of evidence on the links between patient experience and clinical safety and effectiveness. *BMJ Open*, 3, 1,

[6] Siriwardena, A, & Gillam, S 2014. Patient perspectives on quality. *Quality In Primary Care*, 22, 1, pp. 11-15,

[7] Quality I: Productivity and prevention (QIPP): the NHS atlas of variation in healthcare: reducing unwarranted variation to increase value and improve quality. United Kingdom: Right Care; 2011.

[8] Care Quality Commission, 2013. Inpatient Survey 2013: National Summary [online] [Available from http://www.cqc.org.uk/public/reports-surveys-and-reviews/surveys/inpatient-survey-2013] Accessed 11th Feb 2015

[9] Jones, E, Wainwright, T, Foster, J, Smith, J, Middleton, R, & Francis, N 2014. A systematic review of patient reported outcomes and patient experience in enhanced recovery after orthopaedic surgery'. *Annals Of The Royal College Of Surgeons Of England*, 96, 2, pp. 89-94

[10] Beattie M, Lauder W, Atherton I, Murphy DJ. 2014. Instruments to measure patient experience of health care quality in hospitals: a systematic review protocol. *Systematic Reviews*, 3,4,

[11] Edwards KJ, Duff J, Walker K. 2014. What really matters? A multi-view perspective of one patients hospital experience. *Contemporary Nurse*, Nov 28; 5130-5157.

[12] Graham, B, Green, A, James, M, Katz, J, & Swiontkowski, M 2015. Measuring patient satisfaction in orthopaedic surgery. *The Journal Of Bone And Joint Surgery*. American Volume, 97, 1, pp. 80-84.

[13] Tsianakas V, Maben J, Wiseman T, Robert G, Richardson A, Madden P, et al. Using patients' experiences to identify priorities for quality improvement in breast cancer care: patient narratives, surveys or both? BMC Health Serv Res. 2012;12(1):271.

[14] Ahmed F., Burt, J., Roland M., 2014. Measuring Patient Experience: Concepts and Methods. *Patient* 7: 235-241.

[15] Coulter A, Locock L, Ziebland S, Calabrese J. 2014. Collecting data on patient experience is not enough: they must be used to improve care *BMJ* 2014; 348 :g2225

[16] General Register Office for Scotland. http://www.gro-scotland.gov.uk/statistics/theme/population/projections/sub-national/2010-based/tables.html (date last accessed 16th September 2014)

[17] Hamilton DF, Henderson GR, Gaston P, MacDonald D, Howie C, Simpson AH. Comparative outcomes of total hip and knee arthroplasty: a prospective cohort study. *Postgrad Med J*. 2012;88:627-631

[18] Jacobs, C, & Christensen, C 2014. Factors influencing patient satisfaction two to five years after primary total knee arthroplasty. *The Journal Of Arthroplasty*, 29, 6, pp. 1189-1191.

For peer review only

BMJ Open: first published as 10.1136/bmjopen-2015-010871 on 23 May 2016. Downloaded from http://bmjopen.bmj.com/ on April 17, 2024 by guest. Protected by copyright.

[19] Hamilton DF, Burnett R, Patton JT, Moran M, Howie CR, Simpson AHRW, Gaston P. Implant design influences patient outcomes following total knee arthroplasty: a prospective double blind randomised controlled trial. *The Bone and Joint Journal* 2015;97:64-70.

[20] Lindgren, J, Wretenberg, P, Kärrholm, J, Garellick, G, & Rolfson, O 2014. Patient-reported outcome is influenced by surgical approach in total hip replacement: a study of the Swedish Hip Arthroplasty Register including 42,233 patients. *The Bone & Joint Journal*, 96-B, 5, pp. 590-596

[21] Maratt, J, Lee, Y, Lyman, S, & Westrich, G 2015. Predictors of Satisfaction Following Total Knee Arthroplasty. *The Journal Of Arthroplasty* [onliene]

[22] Nam, D, Nunley, R, & Barrack, R 2014. Patient dissatisfaction following total knee replacement: a growing concern? *The Bone & Joint Journal*, 96-B, 11 Supple A, pp. 96-100,

[23] Hamilton DF, Lane JV, MacDonald D, Patton JT, Gaston P, Simpson AHRW, Howie CR. What determines patient satisfaction with surgery? A prospective cohort study of 4709 patients following total joint replacement. *BMJ Open* 2013;3:e002525

[24] Specht K, Kjaersgaard-Andersen P, Kehlet H, Wedderkopp N, Pedersen BD. High patient satisfaction in 445 patients who underwent fast-track hip or knee replacement Acta Orthop 2015;86:702-7

[25] McCusker J, Cole M, Abrahamowicz M, Han L, Podoba JE, Ramman-Haddad L. 2001 Environmental risk factors for delirium in hospitalized older people. *J Am Geriatr Soc*; 49: 1327–34.

[26] McMurdo M, Witham M . 2013. Unnecessary ward moves - bad for patients; bad for healthcare systems. *Age and Ageing*, 42, 555-556.

[27] BAUMANN, C., RAT, A., MAINARD, D., CUNY, C. and GUILLEMIN, F., 2011. Importance of patient satisfaction with care in predicting osteoarthritis-specific health-related quality of life one year after total joint arthroplasty. *Quality of Life Research*, 20(10), pp. 1581-8.

[28] Wright, S, & McSherry, W 2013. A systematic literature review of Releasing Time to Care: The Productive Ward. *Journal Of Clinical Nursing*, 22, 9/10, pp. 1361-1371

[29] The Picker Institute. 2015. *Principles of Patient Centred Care*. [online] Available from http://www.pickereurope.org/about-us/principles-of-patient-centred-care/. [Accessed 24 April 2015]

[30] Rathert, C, Williams, E, McCaughey, D, & Ishqaidef, G. 2015.Patient perceptions of patient-centred care: empirical test of a theoretical model. *Health Expectations: An International Journal Of Public Participation In Health Care And Health Policy*, 18, 2, pp. 199-209

[31] Shenton AK. 2004. Strategies for ensuring trustworthiness in qualitative research projects. Education for Information 22, pp 63-75 [online] Available from http://www.angelfire.com/theforce/shu_cohort_viii/images/Trustworthypaper.pdf [Access 23 March 2015]

Figure Legend

Figure 1 – Major themes and subthemes identified.

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Hierarchy plot demonstrates the relationship between key findings. Communication, pain and the experience of the patient journey through arthroplasty services were 3 distinct themes. The process experience theme summarised 2 distinct but inter-related subthemes as the physical environment and logistical processes experienced during the hospital stay and the perception as to the quality of the care received.

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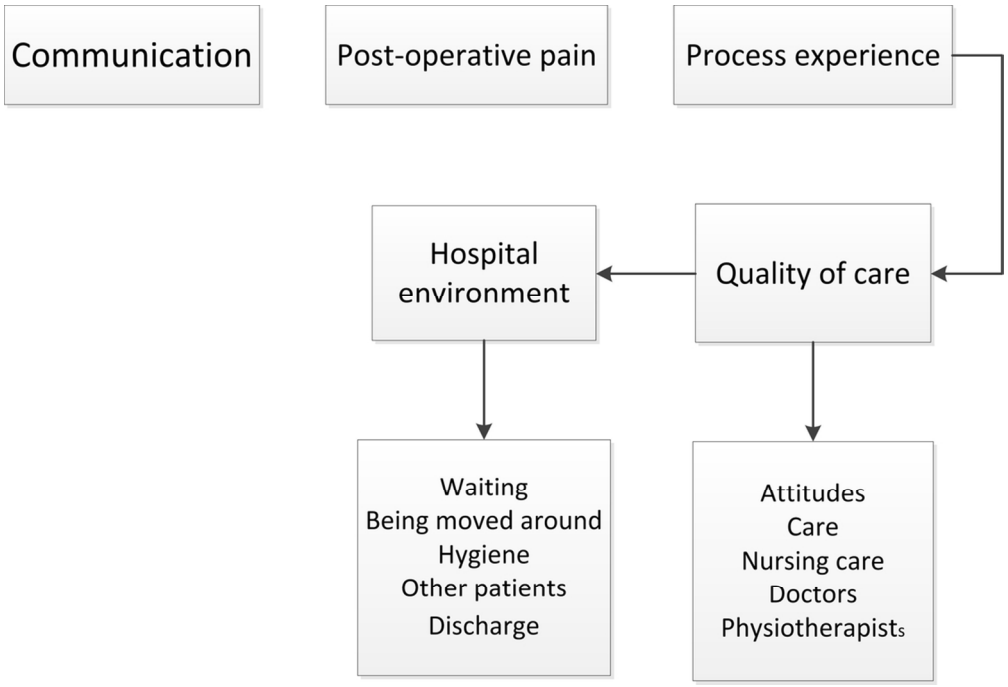

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102x69mm (300 x 300 DPI)

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Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

Developed from:
Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

YOU MUST PROVIDE A RESPONSE FOR ALL ITEMS. ENTER N/A IF NOT APPLICABLE

No. Item	Guide questions/description	Reported on Page #
Domain 1: Research team and reflexivity		
Personal Characteristics		
1. Inter viewer/facilitator	Which author/s conducted the inter view or focus group?	n/a
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	Methods, p.5
3. Occupation	What was their occupation at the time of the study?	Methods, p.5
4. Gender	Was the researcher male or female?	n/a
5. Experience and training	What experience or training did the researcher have?	Methods, p.5
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	n/a
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	n/a
8. Interviewer characteristics	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	n/a
Domain 2: study design		
Theoretical framework		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Methods, p.5
Participant selection		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Methods, p.5
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	Methods, p.5
12. Sample size	How many participants were in the study?	Results, p.6

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13. Non-participation	How many people refused to participate or dropped out? Reasons?	n/a
Setting		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	n/a
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	n/a
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Results, p.6
Data collection		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	n/a
18. Repeat interviews	Were repeat inter views carried out? If yes, how many?	n/a
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	n/a
20. Field notes	Were field notes made during and/or after the inter view or focus group?	n/a
21. Duration	What was the duration of the inter views or focus group?	n/a
22. Data saturation	Was data saturation discussed?	Methods, p.5
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	n/a
Domain 3: analysis and findings		
Data analysis		
24. Number of data coders	How many data coders coded the data?	Methods, p.5
25. Description of the coding tree	Did authors provide a description of the coding tree?	N/A
26. Derivation of themes	Were themes identified in advance or derived from the data?	Methods, p.5
27. Software	What software, if applicable, was used to manage the data?	NVivo, p.5
28. Participant checking	Did participants provide feedback on the findings?	Strengths and limitations, p.10
Reporting		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Results, p 7-9
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Relationship to existing knowledge, p9-10
31. Clarity of major themes	Were major themes clearly presented in the findings?	Results, p7-8 and figure 1
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Discussion, p9-10

Once you have completed this checklist, please save a copy and upload it as part of your submission. When requested to do so as part of the upload process,

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