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BMJ Open

Is Fascia Iliaca Compartment Block administered by paramedics for suspected hip fracture acceptable to patients? A qualitative study

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2019-033398
Article Type:	Original research
Date Submitted by the Author:	08-Aug-2019
Complete List of Authors:	Evans, Bridie; Swansea University, Medicine Brown, Alan; Public contributor c/o Swansea University Fegan, Greg; Swansea University, Medical School Ford, Simon; Abertawe Bro Morgannwg University Health Board Guy, Katy; Abertawe Bro-Morgannwg University Health Board Jones, Jenna; Swansea University, Medical School Jones, Sian; Public contributor c/o Swansea University Keen, Leigh; The Welsh Ambulance Services NHS Trust, Khanom, Ashrafunnesa; Swansea University, School of Medicine Longo, Mirella; Cardiff University School of Medicine, Marie Curie Palliative Care Research Centre Pallister, Ian; Abertawe Bro Morgannwg University Health Board Rees, Nigel; Welsh Ambulance Service NHS Trust Russell, Ian; Swansea University, Medicine Seagrove, Anne; Swansea University, College of Medicine Watkins, Alan; Swansea University, College of Medicine Snooks, Helen; Swansea University, Medicine
Keywords:	hip fracture, pre-hospital, Fascia Iliaca Compartment Block, patient experience, patient acceptability, PAIN MANAGEMENT

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Is Fascia Iliaca Compartment Block administered by paramedics for suspected hip fracture acceptable to patients? A qualitative study

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ABSTRACT

Is Fascia Iliaca Compartment Block administered by paramedics for suspected hip fracture acceptable to patients? A qualitative study

Objectives

To explore patients' experience of receiving pain relief injection for suspected hip fracture from paramedics into the location of the injury.

Design

Qualitative interviews within a feasibility trial about an alternative to routine prehospital pain management for patients with suspected hip fracture.

Setting

Patients treated by paramedics in the catchment area of one Emergency Department in South Wales.

Participants

Patients (n=6) and carers of patients (n=1) who received FICB and consented to interview (n=13).

Intervention

Fascia Iliaca Compartment Block administered to patients with suspected hip fracture by trained paramedics. We randomly allocated eligible patients to FICB - a local anaesthetic injection directly into the hip region - or usual care – most commonly morphine – using audited scratch cards.

Outcomes

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Acceptability and experience of receiving FICB, assessed through interview data. We audio-recorded, with participants' consent, and conducted thematic analysis of interview transcripts. Two researchers, one paramedic and one lay member were in the analysis team.

Results

Patients had little or no memory of being offered, consenting to or receiving FICB. They recalled the reassuring manner and high quality of care received. They accepted FICB without question. Partial or confused memory characterised experience of subsequent hospital care until surgery. They said their priorities when calling for emergency help were to receive effective care. After hospital treatment, they wanted to regain their health and mobility and resume the quality of life they experienced before their injury.

Conclusions

FICB administered at the scene of injury by paramedics to people with suspected hip fracture appears to be acceptable to patients and their families. This study adds to existing evidence supporting feasibility of paramedic administered FICB to patients with suspected hip fracture. Further research is needed to assess safety, effectiveness and cost effectiveness of this health technology in a new setting.

Trial registration: ISRCTN60065373. Registered 11 November 2015

Keywords: hip fracture; fractured neck of femur; pain; pre-hospital; analgesia; anaesthetic; Fascia Iliaca Compartment Block; patient experience; patient acceptability.

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Strengths and limitations of this study

- This study is the first to report patients' experience of receiving Fascia Iliaca Compartment Block in the prehospital setting
- It provides a rare insight into patients' and carer experience and recall of receiving nerve block for pain management in the prehospital setting
- Our findings will inform delivery of a future fully powered randomised controlled trial

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Background

Hip fracture has a high mortality rate made worse by delay to surgery beyond 48 hours [1, 2, 3]. Death rates are 5% at 30 days, 10% at six months and 20% at one year [4, 5, 6]. Hip fractures generate more admissions to orthopaedic trauma wards than any other injury, with an average inpatient stay of 21 days. In the United Kingdom, approximately 75,000 patients sustain such an injury each year and use 2.5% of all hospital beds [7] thus imposing substantial costs on the National Health Service [8, 9].

Hip fractures are very common [10]. It is predicted that 6.3million hip fractures a year will occur worldwide by 2050 [8]. Many patients require prehospital emergency care to manage trauma and transport to hospital. Paramedics have a range of available pain relief options for patients at the scene of their injury, most commonly intravenous morphine and also paracetamol and Entonox [11, 12]. However, morphine can cause several serious side effects, including nausea, constipation, delirium and respiratory depression which may delay surgery, require further treatment and worsen patient outcomes [13]. Adequate pain relief for patients at the point of injury and during transport to hospital is a major challenge. Untreated pain will increase the neuro-hormonal stress response and the risk of delirium [14, 15]. Up to 40% of patients with suspected hip fracture report inadequate or no pre-hospital pain management [11, 16, 17, 18].

Fascia Iliaca Compartment Block (FICB) – a local anaesthetic injection directly into the groin region – is routinely used in the Emergency Department by medical and increasingly, nurse practitioners. It has equal pain relief to opiates and fewer side effects, potentially improving patient outcomes and length of hospital stay [14, 19 – 27]. The Association of Anaesthetists of Great Britain and Ireland supports delivery of FICB by trained non-medical health professionals [28]. FICB could potentially be delivered prehospitally, by nurses [29] or paramedics [30, 31].

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Elderly people who sustain hip fractures often have co-morbidities and are vulnerable to the side effects of opioids [32, 33]. These side effects may need ameliorating by further treatments. Avoiding opioids in this population may therefore reduce morbidity and length of stay in hospital and improve health related quality of life [34 – 40].

Although FICB procedure may provide effective analgesia in the prehospital setting [30] as well as reduce morphine, it was not known whether it would be acceptable to patients. We convened a multi-disciplinary team including paramedics, anaesthetists, patients, carers, methodologists and ambulance service managers. We conducted a study to assess the feasibility of undertaking a fully powered multi centre pragmatic randomised trial to test the clinical and cost effectiveness of paramedics providing FICB as early pain relief at the scene of their injuries for patients who have fractured their hip [19]. Within this feasibility study, we explored patients' experience of receiving FICB for suspected hip fracture. We wanted to explore patients' responses to being offered a local anaesthetic injection in their groin area, the location of the painful injury. We also wished to identify any effects on their experience of treatment and recovery. Appropriate and well-conducted qualitative research can make an important contribution to feasibility studies of randomised trials providing information on acceptability and practical implementation issues [41].

In this paper, we report patient and carer experience of receiving paramedic-administered FICB for a suspected hip fracture.

METHODS

Setting and intervention

We carried out a feasibility trial of paramedic administered FICB for suspected hip fracture, the RAPID trial (Rapid Analgesia for Prehospital hIp Disruption - ISRCTN60065373) described in our

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published protocol [31]. We recruited and trained 19 paramedics based at ambulance stations in the catchment area of one Emergency Department in South Wales to administer FICB to patients with suspected hip fracture. A participating emergency paramedic who attended a 999 call and identified a hip fracture in an eligible patient then used a scratchcard [42] to randomly allocate the individual to receive FICB (if not contra-indicated) or usual care. Full RAPID results are available [19].

Data collection and analysis

To explore patients' experiences of receiving FICB, we invited patients to take part in interviews, either face to face or over the telephone as they preferred. A paramedic research support officer (LK) visited patients in hospital or the community and sought consent, usually within 10 working days of their injury. We sought consent from carers if a patient preferred to them being interviewed in their place. To enable them to make an informed decision, we provided information about the aim of the RAPID trial and what they could expect from taking part and answered any questions.

Interviews were carried out by BAE or JJ who are experienced qualitative researchers. The interview schedule is available as Appendix 1. With participants' consent, we audio-recorded and transcribed discussions. Interviews lasted between 11 and 31 minutes and took place between six and thirty weeks after patients were attended by a paramedic and received FICB for their hip fracture.

We carried out thematic analysis. The analysis team included a lay member (SJ), paramedic research support officer (LK) and two researchers (BAE, JB). They independently read transcripts and made notes before jointly discussing explicit and implicit ideas to develop themes. We looked for consistency between respondents and diverse views also. BAE coordinated discussions and prepared drafts, for critical review by the study team [43].

Reporting

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We report results according to themes identified in the data. We selected quotations to be representative of respondents' comments unless otherwise stated. We identify respondents as patient or carer and with a unique number (e.g. Patient 78).

Ethics

We gained ethical approval from the Wales Research Ethics Committee 6 (reference 15/WA/0439).

Public and patient involvement

Lay members (SJ and AB) with experience and knowledge of hip fractures and emergency care contributed to developing, undertaking and disseminating all aspects of the research during the RAPID feasibility study. They were research co-applicants and also active members of the multi-disciplinary Trial Management Group. This group, made up of co-applicants and study advisors included paramedics, anaesthetists, ambulance service managers, patients, carers, methodologists and research staff, and was responsible for trial implementation. SJ also analysed all interviews, developing themes, guiding interpretation and reviewing draft results with BAE, JJ and LK. These were then reported back to the Trial Management Group for comment and synthesis in the full study findings. We supported our lay members to collaborate as equal members of the research team throughout. In addition we recruited lay members to the independent Trial Steering Committee [44].

RESULTS

Of the 13 RAPID participants who received FICB and consented to interview, we interviewed six patients and one daughter who was present when her mother received FICB. When contacted to arrange the interview, two people said they were too sick to take part, and we could not contact the

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other four. One respondent requested a face to face interview at home (Patient 14) while the remainder asked to talk over the telephone.

We identified three themes relating to care received and experiences of paramedic-administered FICB which were consistent across respondents.

- Memories of receiving pain management from ambulance teams

Most respondents said they could not clearly remember being treated by the paramedics or receiving pain relief. After making an emergency call, respondents said they waited for between half an hour and up to six hours for an ambulance to arrive. In all cases, their overriding memory was of extreme pain and desperation for it to be eased.

> *I can't really remember exactly what was happening because I was in so much pain. I think somebody gave me something to ease the pain...whatever they did for me, it eased that terrific pain. (Patient 111)*

Some respondents vaguely recalled being offered pain relief and the paramedics suggesting they could try a new drug to make them feel better.

> *I think he asked me if I would go into this scheme and I have a feeling that they asked me that and I know I said yes to something. And he gave me an injection and that was fine. I don't even remember going into the hospital. (Patient 64)*

The daughter, whose memory was also dominated by her mother's distress and recalled little detail, said she agreed to her mother receiving an injection because she wanted her to be more comfortable. Just one respondent remembered being offered FICB and said he consented because the paramedic suggested it would enable them to carry him to the ambulance in a chair rather than by stretcher through a window. He recalled how the paramedic carried out the process and when they were able to move him.

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On top of my inner leg, he searched a while and put a few marks and said 'right, I'll inject you now …and we'll wait then we'll see if we can get you into a chair.' …We waited about quarter of an hour, twenty minutes before we attempted to go into the ambulance. With my good leg and then lifting me, I got in all right into a chair and into the ambulance. (Patient 78)

- Trust in paramedic care

Respondents praised the care they received throughout the time they were attended by paramedics as *'perfect'* (P78), *'fabulous'* (P61); they were *'absolutely charming'* (P64), *'miracle workers'* (C68) *'lovely' (P111)* and *'marvellous' (P41)*. Their soothing, calm manner in difficult circumstances made respondents and families feel safe and reassured. Respondents appeared to have confidence in paramedics. By making an emergency call, they were seeking and anticipating the most appropriate treatment and best care.

Gentle…they've got a lot of time for you, they kept talking to her (respondent's mother), assuring her, they did everything they could (Carer 68)

Most respondents recalled a sensation or sound of a crack when they fell and suspected a major injury such as hip fracture. Respondents said they expected pain relief.

...the ambulance men came. And then I kept thinking, you know, a jab of morphine... (Patient 14)

If they recalled events well enough, they said they agreed to what was suggested by paramedics because they trusted them. None of the respondents had any concerns about receiving an injection near the area of injury.

They explained everything – the situation and the reason why, you know, did I want to try this and all this. I was glad to see them come in. It was perfect. I couldn't wish for better (Patient 78)

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- Regaining independence

Respondents' memories of ongoing treatment in hospital were inconsistent. Some reported they received further pain relief while waiting for surgery. One remembered receiving oral medication from a nurse because she felt unwell and nauseous for a time. No other patient recalled any side effects from the pain relief they were given. All said they had surgery on their injured hip within a few days of admission and generally stayed in hospital for between a week and fortnight. They recalled being encouraged to start walking within a day or two days after their surgery. Five respondents were discharged directly to their homes and two were moved to a rehabilitation hospital before discharge. They were keen to leave hospital because they wanted to start resuming normal life and recover the quality, which they measured in mobility, independence and undertaking social activities. None of them had fully regained their mobility when interviewed although most felt they were making progress towards recovery. Several respondents said they had fallen in the past, without obvious injury, or had other health conditions which they managed.

Sustaining a hip fracture had a major impact on respondents' physical and emotional wellbeing. Many said their confidence had been affected following their injury. They felt nervous or unsafe while walking and used a stick or Zimmer frame for support.

> *I've got to hold onto my Zimmer frame…I call it my friend, for the minute, but one day it will go...I'm frightened you see, just in case I fall over again and do my hip in again (Patient 41)*

Several respondents had been very active before their fall and they found their reduced mobility was unwelcome. They said they felt frustrated by the change. Family had provided extra support and some reported having received home-based care and aids such as handrails in their homes. They said they measured their progress by achievements such as walking to the car and climbing the stairs. The accident disrupted other health care, such as delaying cataract surgery.

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DISCUSSION

Summary of findings

Patients had little or no memory of being offered, consenting to or receiving FICB from a paramedic to manage pain associated with hip fracture. They recalled the reassuring and calm manner and high quality of care given by paramedics. They had expected and wished for pain relief as part of their prehospital care and experienced relief when this was given. They accepted FICB, injected in the hip area, without question. Partial and confused memory characterised their experience of subsequent hospital care until surgery. All respondents continued to have limited mobility following discharge from hospital.

Strengths and limitations

As in any qualitative study, patients who were unwilling or unable to take part in these interviews may have had a different perspective on the acceptability of FICB and also other experiences of prehospital care and pain management. However, there was strong consistency across respondents' experiences of treatment for hip fracture. This was an elderly cohort and their poor recall may have been due in some part to their age and possible frailty and also the time since the injury. However, the sample is typical of the older population who experience hip fracture and require prehospital care and conveyance to hospital. One respondent was a carer but also exhibited poor recall of the treatment provided by paramedics, perhaps owing to stress of the emergency event. Only one respondent happened to be male and he was the only respondent to remember and clearly consent to FICB. This study does not consider whether men and women in this age group have different criteria for acceptability of an injection in the groin area.

A strength of this study is the broad perspective which our multi-disciplinary team brought, to the analysis in particular and the whole study generally. Our qualitative analysis team comprised two

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researchers, a patient and a paramedic. Our qualitative work within this feasibility study enabled us to explore implementation issues to inform our ongoing research [41].

Implications for practice

This is the first study investigating prehospital administration of FICB from the perspective of patients presenting with suspected hip fracture. We believe it may also be the first study reporting patient experience of any other nerve block for pain management. Patients' perspectives are vital when exploring use of new techniques for delivering health and social care [45]. Qualitative methods enable in-depth investigation of patients' views and experiences to provide a good understanding of how innovations in health technology and delivery can affect patients and also any unforeseen negative consequences [46]. We found that hip fracture patients' had very limited memory of their care and treatment and wanted to regain mobility and independence after surgery for their injury. The quality of care, reassurance and administration of pain management was more important to patients than the mechanism of delivering the intervention. Patient experience of prehospital care is known to be enhanced by the manner in which they are treated, so that emotional and social needs are attended to alongside physical ones [47] and patients feel reassured [48]. Effective communication by paramedics reduces fear and enhances psychological wellbeing. Intonation and manner, suggesting kindness, is a priority for patients receiving emergency care. Managing the distress of family members in a thoughtful and considered way also contributes to the patient's positive experience of prehospital care [49]. Additionally, patient satisfaction increases when paramedics are able to resolve the problem and meet the patient's expectations of care [50]. Effective pain management, which is a patient priority in hip fracture and other traumatic emergencies [17] is therefore of high importance [51].

Implications for research

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Patients' apparent lack of memory of emergency care illustrates the challenges of ensuring high ethical standards when consenting patients to research about prehospital care. Current ethical standards in prehospital research are varied and terminology is inconsistent [52]. Calling an ambulance is a stressful task and new approaches to consenting patients to prehospital research are required [52]. In the prehospital setting, where patients and onlookers expect timely treatment in potentially distressing situations, trust in paramedics could mean patients don't question how their treatment needs are addressed. In this study, it appears patients prioritised effective pain management over the route of administration and did not question the use of FICB as long as the drug was able to control their pain. This study shows that patients and family members are unable to fully recall details of an emergency event, raising questions about their ability to make informed decisions about participating in research when experiencing physical and emotional trauma and crisis. Communicating equipoise is challenging for clinicians and the process can be easily disrupted [53]. Our approach to gaining consent to having their data included in research up to 10 days after a patient's injury is one we have gained permission to use in several studies and creates a less stressful situation with more time for potential participants to consider taking part in research [54, 55].

Interpretation and further research

This study suggests that patients with suspected hip fracture prioritise effective and reassuring care from a paramedic and also resuming normal life after hospital treatment. Fascia Iliaca Compartment Block is a safe and effective pain management for hip fracture in hospital allowing reduced morphine administration and potentially fewer side effects [20, 23, 56, 57]. It can also be administered by paramedics at the scene of injury although evidence of effectiveness in this setting is lacking [19, 29, 30, 56]. The RAPID study has demonstrated that paramedics are willing and able to administer FICB to patients with suspected hip fracture before ambulance transport to hospital [58]. This study did not raise any concerns about the acceptability of FICB to patients and families for managing prehospital trauma. Our interview findings, that patients have limited memory of

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prehospital treatment, helps us to understand the challenges of recording outcomes about pain experience. Results also indicate patient priorities concerning regaining normal home life and independence [59, 60].

Further research is now needed to assess safety, clinical and cost effectiveness of this intervention, including patients' length of hospital stay, satisfaction with care and subsequent health-related quality-of-life. Having demonstrated that a randomised trial of FICB is feasible and met our predefined progression criteria [19] we propose a fully powered multi-centre randomised controlled trial. This will provide an opportunity to evaluate whether FICB is clinically effective and safe for patients and is cost effective for the NHS. This reflects the wider NHS strategy to provide the right care to the patient and improve the effectiveness and efficiency of patient journeys to and through hospital [61].

Abbreviations

ED	Emergency Department
FICB	Fascia Iliaca Compartment Block
NHS	National Health Service

Declarations

Data sharing statement

No additional data available.

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Ethical approval and consent to participate

We gained ethical approval from the Wales Research Ethics Committee 6 (reference 15/WA/0439). All respondents gave informed consent to participate in this study.

Consent for publication

Not applicable

Availability of data and material

All data generated or analysed during this study are included in this published article.

Competing interests

Ian Pallister is Director of Trauma Simulation Ltd, which produced the bespoke mannequin used by paramedics in training to deliver the Fascia Iliaca Compartment Block intervention. The other authors declare that they have no competing interests.

Funding

Health and Care Research Wales, part of the Welsh Government, funded RAPID through their Research for Patient and Public Benefit (RfPPB) stream (1003).

Authors' contributions

BAE drafted the manuscript with editorial input from all authors – AB, JJ, GF, SF, KG, SJ, LK, AK, ML, IP, NR, ACS, ITR, AW, HS. BAE led qualitative analysis with JJ, SJ and LK. The research idea was conceived and developed by NR, IP and SF, with methodological advice from GF, HS and ITR. All authors read and approved the final manuscript.

Acknowledgments

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We thank the patients and their families who took part in interviews about their experiences and all the paramedics who volunteered to take part in RAPID. We thank the members of the Trial Steering Committee: Chris Foy (Chair and Statistician, Gloucestershire Hospitals NHS R&D Service); Tim Coats (Professor of Emergency Medicine, University of Leicester); Matt Costa (Professor of Orthopaedic Trauma Surgery, Oxford University and John Radcliffe Hospital), Philip Bell (Lay Member) and Graham McLelland (Research Paramedic, North East Ambulance Service). We also thank Emma Baker and Carys Evans project administrators, for their hard work throughout this feasibility study.

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Swansea University Medical School Ysgol Feddygaeth Prifysgol Abertawe
Swansea University Prifysgol Abertawe

RAPID
Fast pain relief for hip fracture:
A study with paramedics

Interviews with patients who have received the FICB intervention

We will interview ten patients who receive the FICB intervention prehospitally, between four to six months after being treated for their hip injury. We will sample patients purposively to include, as far as possible, a range of:

- Age
- Gender
- History of previous hip fracture
- Time and day of injury
- Study paramedic who assessed the patient

Objectives

To explore patients' views on:

1. Experience of care and pain management by paramedics
2. Experience receiving the FICB intervention including side effects
3. Acceptability of the FICB intervention
4. Experience of treatment in hospital
5. Experience of recovery including mobility and overall quality of life

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Swansea University Prifysgol Abertawe

Before interview:
Thanks for taking part
Explain study
Explain type of questions and length of time anticipated
Explain tape recording
Explain confidentiality and anonymity + quotes used in report
Confirm consent
Repeat thanks

Patient Interview Schedule

Thank you for agreeing to talk to me today. As I explained in the information you received, we are studying how paramedics care for people who injure their hip and safely manage their pain. I would like to ask you about your experience of being helped by a paramedic when you recently injured your hip. I am sure this was a very painful experience and you may not remember everything that happened. Please say if you don't remember something when I ask you a question. It's perfectly OK if you can't answer any of my questions.

Before I start, do you have any questions?

Are you happy to go ahead and for me to record our interview?

- **Turn on tape recorder: give date, interviewer name, participant ID, confirm consent**

1: Please can you talk me through what happened when the ambulance service visited you because you injured your hip?

- What triggered the call?
- Who called the ambulance service?
- Were you alone/at home?
- How did the ambulance crew look after you?

2: Can you tell me more about how the ambulance crew managed your pain?

- How did they explain what they were going to do for you?
- How did you feel about receiving an injection near your painful hip?
- How would you describe the pain you felt?
- How quickly did the pain reduce, if at all?
- Did you need more pain relief after the first injection?
- Did you experience any side effects from the treatment?
    - Confusion/nausea/constipation?

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3: What happened when you arrived at hospital?

- How would you describe the pain at this point? (more/less/no change from before)
- How much more pain relief did you receive? How was it administered?
- How quickly did you receive surgery on the hip? (check if underwent surgery)

4: How have you recovered from your injury?

- How many days after treatment did you get out of bed and then start to walk around?
- How much are you able to stand and walk now? How comfortable is it?
- Overall, how do you feel compared to before you went to hospital because of your hip?

5: Looking back to when you injured your hip, how do you feel about the way the ambulance service helped you?

- About the care you received?
- About the way the crew were with you?
- Did you feel confident about the decisions that were made?
    - If not, why not?
- Did you feel safe?
    - If not, why not?

6: Have you injured your hip before?

- How did this experience compare with last time?
    - Levels of pain
    - How quickly you were mobile again after treatment

7: Is there any way your experience with the ambulance service for this incident could have been better?

8: Is there anything else you would like to add?

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COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	8
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	8
Occupation	3	What was their occupation at the time of the study?	8
Gender	4	Was the researcher male or female?	1
Experience and training	5	What experience or training did the researcher have?	1
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	8
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	8
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	8
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	8
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	8
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	8
Sample size	12	How many participants were in the study?	9
Non-participation	13	How many people refused to participate or dropped out? Reasons?	9-10
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	10
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	8
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	9
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	8
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	8
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	8
Field notes	20	Were field notes made during and/or after the inter view or focus group?	8
Duration	21	What was the duration of the inter views or focus group?	8
Data saturation	22	Was data saturation discussed?	8
Transcripts returned	23	Were transcripts returned to participants for comment and/or	8

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	8
Description of the coding tree	25	Did authors provide a description of the coding tree?	8
Derivation of themes	26	Were themes identified in advance or derived from the data?	9
Software	27	What software, if applicable, was used to manage the data?	8
Participant checking	28	Did participants provide feedback on the findings?	8
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	9
Data and findings consistent	30	Was there consistency between the data presented and the findings?	9-12
Clarity of major themes	31	Were major themes clearly presented in the findings?	9-12
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	9-12

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

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Is Fascia Iliaca Compartment Block administered by paramedics for suspected hip fracture acceptable to patients? A qualitative study

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2019-033398.R1
Article Type:	Original research
Date Submitted by the Author:	15-Oct-2019
Complete List of Authors:	Evans, Bridie; Swansea University, Medicine Brown, Alan; Public contributor c/o Swansea University Fegan, Greg; Swansea University, Medical School Ford, Simon; Abertawe Bro Morgannwg University Health Board Guy, Katy; Abertawe Bro-Morgannwg University Health Board Jones, Jenna; Swansea University, Medical School Jones, Sian; Public contributor c/o Swansea University Keen, Leigh; The Welsh Ambulance Services NHS Trust, Khanom, Ashrafunnesa; Swansea University, School of Medicine Longo, Mirella; Cardiff University School of Medicine, Marie Curie Palliative Care Research Centre Pallister, Ian; Abertawe Bro Morgannwg University Health Board Rees, Nigel; Welsh Ambulance Service NHS Trust Russell, Ian; Swansea University, Medicine Seagrove, Anne; Swansea University, College of Medicine Watkins, Alan; Swansea University, College of Medicine Snooks, Helen; Swansea University, Medicine
Primary Subject Heading:	Emergency medicine
Secondary Subject Heading:	Health services research, Qualitative research
Keywords:	hip fracture, pre-hospital, Fascia Iliaca Compartment Block, patient experience, patient acceptability, PAIN MANAGEMENT

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Is Fascia Iliaca Compartment Block administered by paramedics for suspected hip fracture acceptable to patients? A qualitative study

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ABSTRACT

Is Fascia Iliaca Compartment Block administered by paramedics for suspected hip fracture acceptable to patients? A qualitative study

Objective

To explore patients' experience of receiving pain relief injection for suspected hip fracture from paramedics at the location of the injury.

Design

Qualitative interviews within a feasibility trial about an alternative to routine prehospital pain management for patients with suspected hip fracture.

Setting

Patients treated by paramedics in the catchment area of one Emergency Department in South Wales.

Participants

Six patients and one carer of a patient who received FICB.

Intervention

Fascia Iliaca Compartment Block (FICB) administered to patients with suspected hip fracture by trained paramedics. We randomly allocated eligible patients to FICB - a local anaesthetic injection directly into the hip region - or usual care – most commonly morphine – using audited scratch cards.

Outcomes

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Acceptability and experience of receiving FICB, assessed through interview data. We audio-recorded, with participants' consent, and conducted thematic analysis of interview transcripts. The analysis team comprised two researchers, one paramedic and one lay member.

Results

Patients had little or no memory of being offered, consenting to or receiving FICB. They recalled the reassuring manner and high quality of care received. They accepted FICB without question. Partial or confused memory characterised experience of subsequent hospital care until surgery. They said their priorities when calling for emergency help were to receive effective care. After hospital treatment, they wanted to regain their health and mobility and resume the quality of life they experienced before their injury.

Conclusions

This study did not raise any concerns about the acceptability of FICB administered at the scene of injury by paramedics to people with suspected hip fracture. It adds to existing evidence about patient and carer experience of on-scene care for people with suspected hip fracture. Further research is needed to assess safety, effectiveness and cost effectiveness of this health technology in a new setting.

Trial registration: ISRCTN60065373. Registered 11 November 2015

Keywords: hip fracture; fractured neck of femur; pain; pre-hospital; analgesia; anaesthetic; Fascia Iliaca Compartment Block; patient experience; patient acceptability.

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Strengths and limitations of this study

- This study is the first qualitative investigation to report patients' experience of receiving Fascia Iliaca Compartment Block in the prehospital setting and provides a rare insight into the experiences of patients and carers but the small number of respondents limits the strength of our conclusions
- Our qualitative method allowed us to explore patients' experiences but cannot conclude that FICB is acceptable to most patients
- Half the patients who consented to interview were too unwell to take part or could not be contacted; these patients' perspective on FICB and prehospital care for hip fracture may differ from those who took part in interviews

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Background

Hip fracture has a high mortality rate and associated with delay to surgery beyond 48 hours [1, 2, 3]. Death rates are around 7% at 30 days, 10% at six months and 20% at one year [4, 5, 6]. Hip fractures generate more admissions to orthopaedic trauma wards than any other injury, with an average inpatient stay of 21 days. In the United Kingdom, approximately 75,000 patients sustain such an injury each year and use 2.5% of all hospital beds [7] thus imposing substantial costs on the National Health Service [8, 9].

Hip fractures are very common [10]. It is predicted that 6.3million hip fractures a year will occur worldwide by 2050 [8]. Many patients require prehospital emergency care to manage trauma and transport to hospital. Paramedics have a range of available pain relief options for patients at the scene of their injury, most commonly intravenous morphine and also paracetamol and Entonox [11, 12]. However, morphine can cause several serious side effects, including nausea, constipation, delirium and respiratory depression. These side effects may delay surgery, require the patient to need further treatment and worsen patient outcomes [13]. Adequate pain relief for patients at the point of injury and during transport to hospital is a major challenge. Untreated pain will increase the neuro-hormonal stress response and the risk of delirium [14, 15]. Up to 40% of patients with suspected hip fracture report inadequate or no pre-hospital pain management [11, 16, 17, 18].

Fascia Iliaca Compartment Block (FICB) – a local anaesthetic injection directly into the groin region – is routinely used in the Emergency Department by medical and increasingly, nurse practitioners. It has equal pain relief to opioids and fewer side effects, potentially improving patient outcomes and length of hospital stay [14, 19 – 27]. The Association of Anaesthetists of Great Britain and Ireland supports delivery of FICB by trained non-medical health professionals [28]. FICB could potentially be delivered prehospitally, by nurses [29] or paramedics [30, 31].

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Older people who sustain hip fractures often have co-morbidities and are vulnerable to the side effects of opioids [32, 33]. These side effects may need ameliorating by further treatments. Avoiding opioids in this population may therefore reduce morbidity and length of stay in hospital and improve health related quality of life [34 – 40].

Although FICB may provide effective analgesia in the prehospital setting [30] as well as reduce morphine, it was not known whether it would be acceptable to patients. We convened a multi-disciplinary team including paramedics, anaesthetists, patients, carers, ambulance service managers and methodologists who advised on the rigorous planning and conduct of this study. We conducted a study to assess the feasibility of undertaking a fully powered multi centre pragmatic randomised trial to test the clinical and cost effectiveness of paramedics providing FICB as early pain relief at the scene of their injuries for patients who have fractured their hip [19]. Within this feasibility study, we explored patients' experience of receiving FICB for suspected hip fracture. We wanted to explore patients' responses to being offered a local anaesthetic injection in their groin area, the location of the painful injury. We also wished to identify any effects on their experience of treatment and recovery. Appropriate and well-conducted qualitative research can make an important contribution to feasibility studies of randomised trials providing information on acceptability and practical implementation issues [41].

In this paper, we report patient and carer experience of receiving paramedic-administered FICB for a suspected hip fracture.

METHODS

Setting and intervention

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We carried out a feasibility trial of paramedic administered FICB for suspected hip fracture, the RAPID trial (Rapid Analgesia for Prehospital hIp Disruption - ISRCTN60065373) described in our published protocol [31]. We recruited and trained 19 paramedics based at ambulance stations in the catchment area of one Emergency Department in South Wales to administer FICB to patients with suspected hip fracture. A participating emergency paramedic who attended a 999 call and identified a hip fracture in an eligible patient then used a scratchcard [42] to randomly allocate the individual to receive FICB (if not contra-indicated) or usual care. Full RAPID results are available [19].

Data collection and analysis

To explore patients' experiences of receiving FICB, we invited patients to take part in interviews, either face to face or over the telephone as they preferred. A paramedic research support officer (LK) visited patients in hospital or the community and sought informed consent in writing, usually within 10 working days of their injury. We sought written informed consent from carers if a patient preferred to them being interviewed in their place. To enable them to make an informed decision, we provided information about the aim of the RAPID trial and what they could expect from taking part and answered any questions.

Interviews were carried out by BAE or JJ who are experienced qualitative researchers. The interview schedule is available as Appendix 1. With participants' consent, we audio-recorded and transcribed discussions. Interviews lasted between 11 and 31 minutes and took place between six and thirty weeks after patients were attended by a paramedic and received FICB for their hip fracture.

We carried out thematic analysis. The analysis team included a lay member (SJ), paramedic research support officer (LK) and two researchers (BAE, JB). They independently read transcripts and made notes before jointly discussing explicit and implicit ideas to develop themes. We looked for consistency between respondents and diverse views also. BAE coordinated discussions and prepared drafts, for critical review by the study team [43].

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Reporting

We report results according to themes identified in the data. We selected quotations to be representative of respondents' comments unless otherwise stated. We identify respondents as patient or carer and with a unique number (e.g. Patient 78).

Ethics

We gained ethical approval from the Wales Research Ethics Committee 6 (reference 15/WA/0439).

Public and patient involvement

Lay members (SJ and AB) with experience and knowledge of hip fractures and emergency care contributed to developing, undertaking and disseminating all aspects of the research during the RAPID feasibility study. They were research co-applicants and also active members of the multi-disciplinary Trial Management Group. This group, made up of co-applicants and study advisors included paramedics, anaesthetists, ambulance service managers, patients, carers, methodologists and research staff, and was responsible for trial implementation. SJ also analysed all interviews, developing themes, guiding interpretation and reviewing draft results with BAE, JJ and LK. These were then reported back to the Trial Management Group for comment and synthesis in the full study findings. We supported our lay members to collaborate as equal members of the research team throughout. In addition we recruited lay members to the independent Trial Steering Committee [44].

RESULTS

Of the 13 RAPID participants who received FICB and consented to interview, we interviewed six patients and one daughter who was present when her mother received FICB. When contacted to

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arrange the interview, two people said they were too sick to take part, and we could not contact the other four. One respondent requested a face to face interview at home (Patient 14) while the remainder asked to talk over the telephone.

We identified three themes relating to care received and experiences of paramedic-administered FICB which were consistent across respondents.

- Memories of receiving pain management from ambulance teams

Most respondents said they could not clearly remember being treated by the paramedics or receiving pain relief. After making an emergency call, respondents said they waited for between half an hour and six hours for an ambulance to arrive. In all cases, their overriding memory was of extreme pain and desperation for it to be eased.

> *I can't really remember exactly what was happening because I was in so much pain. I think somebody gave me something to ease the pain...whatever they did for me, it eased that terrific pain. (Patient 111)*

Some respondents vaguely recalled being offered pain relief and the paramedics suggesting they could try a new drug to make them feel better.

> *I think he asked me if I would go into this scheme and I have a feeling that they asked me that and I know I said yes to something. And he gave me an injection and that was fine. I don't even remember going into the hospital. (Patient 64)*

The daughter, whose memory was also dominated by her mother's distress and recalled little detail, said she agreed to her mother receiving an injection because she wanted her to be more comfortable. Just one respondent remembered being offered FICB and said he consented because the paramedic suggested it would enable them to carry him to the ambulance in a chair through the front door rather than pass him by stretcher through a window. He recalled how the paramedic carried out the process and when they were able to move him.

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On top of my inner leg, he searched a while and put a few marks and said 'right, I'll inject you now …and we'll wait then we'll see if we can get you into a chair.' …We waited about quarter of an hour, twenty minutes before we attempted to go into the ambulance. With my good leg and then lifting me, I got in all right into a chair and into the ambulance. (Patient 78)

- Trust in paramedic care

Respondents praised the care they received throughout the time they were attended by paramedics as *'perfect'* (P78), *'fabulous'* (P61); they were *'absolutely charming'* (P64), *'miracle workers'* (C68) *'lovely' (P111)* and *'marvellous' (P41)*. Their soothing, calm manner in difficult circumstances made respondents and families feel safe and reassured. Respondents appeared to have confidence in paramedics. By making an emergency call, they were seeking and anticipating the most appropriate treatment and best care.

Gentle…they've got a lot of time for you, they kept talking to her (respondent's mother), assuring her, they did everything they could (Carer 68)

Most respondents recalled a sensation or sound of a crack when they fell and suspected a major injury such as hip fracture. Respondents said they expected pain relief.

...the ambulance men came. And then I kept thinking, you know, a jab of morphine... (Patient 14)

If they recalled events well enough, they said they agreed to what was suggested by paramedics because they trusted them. None of the respondents had any concerns about receiving an injection near the area of injury.

They explained everything – the situation and the reason why, you know, did I want to try this and all this. I was glad to see them come in. It was perfect. I couldn't wish for better (Patient 78)

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- Regaining independence

Respondents' memories of ongoing treatment in hospital were inconsistent. Some reported they received further pain relief while waiting for surgery. One remembered receiving oral medication from a nurse because she felt unwell and nauseous for a time. No other patient recalled any side effects from the pain relief they were given. All said they had surgery on their injured hip within a few days of admission and generally stayed in hospital for between a week and fortnight. They recalled being encouraged to start walking within a day or two days after their surgery. Five respondents were discharged directly to their homes and two were moved to a rehabilitation hospital before discharge. They were keen to leave hospital because they wanted to start resuming normal life and recover the quality, which they measured in mobility, independence and undertaking social activities. None of them had fully regained their mobility when interviewed although most felt they were making progress towards recovery. Several respondents said they had fallen in the past, without obvious injury, or had other health conditions which they managed.

Sustaining a hip fracture had a major impact on respondents' physical and emotional wellbeing. Many said their confidence had been affected following their injury. They felt nervous or unsafe while walking and used a stick or Zimmer frame for support.

> *I've got to hold onto my Zimmer frame…I call it my friend, for the minute, but one day it will go...I'm frightened you see, just in case I fall over again and do my hip in again (Patient 41)*

Several respondents had been very active before their fall and they found their reduced mobility was unwelcome. They said they felt frustrated by the change. Family had provided extra support and some reported having received home-based care and aids such as handrails in their homes. They said they measured their progress by achievements such as walking to the car and climbing the stairs. The accident disrupted other health care, such as delaying cataract surgery.

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DISCUSSION

Summary of findings

Patients had little or no memory of being offered, consenting to or receiving FICB from a paramedic to manage pain associated with hip fracture. They recalled the reassuring and calm manner and high quality of care given by paramedics. They had expected and wished for pain relief as part of their prehospital care and experienced relief when this was given. They accepted FICB, injected in the hip area, without question. Partial and confused memory characterised their experience of subsequent hospital care until surgery. All respondents continued to have limited mobility following discharge from hospital.

Strengths and limitations

As in any qualitative study, patients who were unwilling or unable to take part in these interviews may have had a different perspective on the acceptability of FICB and also other experiences of prehospital care and pain management. This was a small sample, limiting us to study acceptability of FICB to selected patients. However, there was strong consistency across respondents' experiences of treatment for hip fracture. This was an older cohort and their poor recall may have been due in part to their age and possible frailty and also to the time since the injury. Patients' ability to recall pain is known to be variable [45]. However, the sample is typical of the older population with capacity who experience hip fracture and require prehospital care and conveyance to hospital. One respondent was a carer but also exhibited poor recall of the treatment provided by paramedics, perhaps owing to the stress of the emergency event. The only male respondent was the only one to remember FICB and clearly consent to it. This study does not consider whether men and women in this age group have different criteria for acceptability of an injection in the groin area.

Another strength of this study is the broad perspective which our multi-disciplinary team brought, in particular to analysis and the whole study generally. Our qualitative analysis team comprised two

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researchers, a patient and a paramedic. Our qualitative work within this feasibility study enabled us to inform future research by exploring implementation issues [41].

Implications for practice

This is the first study investigating prehospital administration of FICB from the perspective of patients presenting with suspected hip fracture. We believe it may also be the first study reporting patient experience of any other nerve block for pain management. Patients' perspectives are vital when exploring use of new techniques for delivering health and social care [46]. Qualitative methods enable in-depth investigation of patients' views and experiences to provide a good understanding of how innovations in health technology and delivery can affect patients and also any unforeseen negative consequences [47]. We found that hip fracture patients' had very limited memory of their care and treatment and wanted to regain mobility and independence after surgery for their injury. The quality of care, reassurance and administration of pain management was more important to patients than the mechanism of delivering the intervention. Patient experience of prehospital care is known to be enhanced by the manner in which they are treated, so that emotional and social needs are attended to alongside physical ones [48] and patients feel reassured [49]. Effective communication by paramedics reduces fear and enhances psychological wellbeing. Intonation and manner, suggesting kindness, is a priority for patients receiving emergency care. Managing the distress of family members in a thoughtful and considered way also contributes to the patient's positive experience of prehospital care [50]. Additionally, patient satisfaction increases when paramedics are able to resolve the problem and meet the patient's expectations of care [51]. Effective pain management, which is a patient priority in hip fracture and other traumatic emergencies [17] is therefore of high importance [52].

Implications for research

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Patients' lack of memory of emergency care illustrates the challenges of ensuring high ethical standards when consenting patients to research about prehospital care. In this study, we gained ethical approval to seek consent to participation in research more than a week after the emergency event. We judged that truly informed consent to research cannot be given in the emotional and distressing circumstances of physical trauma because it adds to the burden experienced by patients and carers [53]. Around ten days later, we followed normal research consent processes when patients were visited by a research nurse who discussed the study and provided written materials. Research ethics committees consider that this approach is less stressful and gives more time for potential participants to consider taking part in research [54, 55, 56]. Consenting patients to prehospital research must recognise the cognitive effect of emergency care [57]. Patients' inability to remember the emergency clearly reinforces the argument that they are unable to give truly informed consent when experiencing the emotional and physical trauma of a crisis. This is particularly relevant for older patients, in considerable pain, likely to be frail and possibly experiencing cognitive confusion. But we report that a carer, the daughter of an older patient, also experienced poor recall, highlighting the disruptive nature of trauma for people of any age. Our experience contributes to the debates about ethical standards in prehospital research.

Interpretation and further research

This study suggests that patients with suspected hip fracture prioritise effective and reassuring care from a paramedic and also resuming normal life after hospital treatment. Fascia Iliaca Compartment Block is a safe and effective pain management for hip fracture in hospital allowing reduced morphine administration and potentially fewer side effects [20, 23, 58, 59]. It can also be administered by paramedics at the scene of injury although evidence of effectiveness in this setting is lacking [19, 29, 30, 58]. The RAPID study has demonstrated that paramedics are willing and able to administer FICB to patients with suspected hip fracture before ambulance transport to hospital [60]. This study did not raise any concerns about the acceptability of FICB to patients and families for

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managing prehospital trauma. Our interview findings, that patients have limited memory of prehospital treatment, helps us to understand the challenges of recording outcomes about pain experience. Results also indicate patient priorities concerning regaining normal home life and independence [61, 62].

Further research is now needed to assess safety, clinical and cost effectiveness of this intervention, including patients' length of hospital stay, satisfaction with care and subsequent health-related quality-of-life. Having demonstrated that a randomised trial of FICB is feasible and met our predefined progression criteria [19] we propose a fully powered multi-centre randomised controlled trial. This will provide an opportunity to evaluate whether FICB is clinically effective and safe for patients and is cost effective for the NHS. This reflects the wider NHS strategy to provide the right care to the patient and improve the effectiveness and efficiency of patient journeys to and through hospital [63].

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Abbreviations

ED	Emergency Department
FICB	Fascia Iliaca Compartment Block
NHS	National Health Service

Declarations

Data sharing statement

No additional data available.

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Ethical approval and consent to participate

We gained ethical approval from the Wales Research Ethics Committee 6 (reference 15/WA/0439). All respondents gave informed consent in writing to participate in this study.

Consent for publication

Not applicable

Availability of data and material

All data generated or analysed during this study are included in this published article.

Competing interests

Ian Pallister is Director of Trauma Simulation Ltd, which produced the bespoke mannequin used by paramedics in training to deliver the Fascia Iliaca Compartment Block intervention. The other authors declare that they have no competing interests.

Funding

Health and Care Research Wales, part of the Welsh Government, funded RAPID through their Research for Patient and Public Benefit (RfPPB) stream (1003).

Authors' contributions

BAE drafted the manuscript with editorial input from all authors – AB, JJ, GF, SF, KG, SJ, LK, AK, ML, IP, NR, ACS, ITR, AW, HS. BAE led qualitative analysis with JJ, SJ and LK. The research idea was conceived and developed by NR, IP and SF, with methodological advice from GF, HS and ITR. All authors read and approved the final manuscript.

Acknowledgments

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We thank the patients and their families who took part in interviews about their experiences and all the paramedics who volunteered to take part in RAPID. We thank the members of the Trial Steering Committee: Chris Foy (Chair and Statistician, Gloucestershire Hospitals NHS R&D Service); Tim Coats (Professor of Emergency Medicine, University of Leicester); Matt Costa (Professor of Orthopaedic Trauma Surgery, Oxford University and John Radcliffe Hospital), Philip Bell (Lay Member) and Graham McLelland (Research Paramedic, North East Ambulance Service). We also thank Emma Baker and Carys Evans for their hard work as project administrators throughout this feasibility study.

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Swansea University Medical School Ysgol Feddygaeth Prifysgol Abertawe
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RAPID
Fast pain relief for hip fracture:
A study with paramedics

Interviews with patients who have received the FICB intervention

We will interview ten patients who receive the FICB intervention prehospitally, between four to six months after being treated for their hip injury. We will sample patients purposively to include, as far as possible, a range of:

- Age
- Gender
- History of previous hip fracture
- Time and day of injury
- Study paramedic who assessed the patient

Objectives

To explore patients' views on:

1. Experience of care and pain management by paramedics
2. Experience receiving the FICB intervention including side effects
3. Acceptability of the FICB intervention
4. Experience of treatment in hospital
5. Experience of recovery including mobility and overall quality of life

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Before interview:
Thanks for taking part
Explain study
Explain type of questions and length of time anticipated
Explain tape recording
Explain confidentiality and anonymity + quotes used in report
Confirm consent
Repeat thanks

Patient Interview Schedule

Thank you for agreeing to talk to me today. As I explained in the information you received, we are studying how paramedics care for people who injure their hip and safely manage their pain. I would like to ask you about your experience of being helped by a paramedic when you recently injured your hip. I am sure this was a very painful experience and you may not remember everything that happened. Please say if you don't remember something when I ask you a question. It's perfectly OK if you can't answer any of my questions.

Before I start, do you have any questions?

Are you happy to go ahead and for me to record our interview?

- **Turn on tape recorder: give date, interviewer name, participant ID, confirm consent**

1: Please can you talk me through what happened when the ambulance service visited you because you injured your hip?

- What triggered the call?
- Who called the ambulance service?
- Were you alone/at home?
- How did the ambulance crew look after you?

2: Can you tell me more about how the ambulance crew managed your pain?

- How did they explain what they were going to do for you?
- How did you feel about receiving an injection near your painful hip?
- How would you describe the pain you felt?
- How quickly did the pain reduce, if at all?
- Did you need more pain relief after the first injection?
- Did you experience any side effects from the treatment?
    - Confusion/nausea/constipation?

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3: What happened when you arrived at hospital?

- How would you describe the pain at this point? (more/less/no change from before)
- How much more pain relief did you receive? How was it administered?
- How quickly did you receive surgery on the hip? (check if underwent surgery)

4: How have you recovered from your injury?

- How many days after treatment did you get out of bed and then start to walk around?
- How much are you able to stand and walk now? How comfortable is it?
- Overall, how do you feel compared to before you went to hospital because of your hip?

5: Looking back to when you injured your hip, how do you feel about the way the ambulance service helped you?

- About the care you received?
- About the way the crew were with you?
- Did you feel confident about the decisions that were made?
    - If not, why not?
- Did you feel safe?
    - If not, why not?

6: Have you injured your hip before?

- How did this experience compare with last time?
    - Levels of pain
    - How quickly you were mobile again after treatment

7: Is there any way your experience with the ambulance service for this incident could have been better?

8: Is there anything else you would like to add?

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COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	8
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	8
Occupation	3	What was their occupation at the time of the study?	8
Gender	4	Was the researcher male or female?	1
Experience and training	5	What experience or training did the researcher have?	1
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	8
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	8
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	8
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	8
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	8
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	8
Sample size	12	How many participants were in the study?	9
Non-participation	13	How many people refused to participate or dropped out? Reasons?	9-10
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	10
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	8
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	9
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	8
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	8
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	8
Field notes	20	Were field notes made during and/or after the inter view or focus group?	8
Duration	21	What was the duration of the inter views or focus group?	8
Data saturation	22	Was data saturation discussed?	8
Transcripts returned	23	Were transcripts returned to participants for comment and/or	8

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	8
Description of the coding tree	25	Did authors provide a description of the coding tree?	8
Derivation of themes	26	Were themes identified in advance or derived from the data?	9
Software	27	What software, if applicable, was used to manage the data?	8
Participant checking	28	Did participants provide feedback on the findings?	8
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	9
Data and findings consistent	30	Was there consistency between the data presented and the findings?	9-12
Clarity of major themes	31	Were major themes clearly presented in the findings?	9-12
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	9-12

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

Once you have completed this checklist, please save a copy and upload it as part of your submission. DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.

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