Faculty of Health & Human Sciences

RESEARCH IN

PRACTICE

Title: The management of pelvic injuries in the prehospital environment. A qualitative study

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Contents

Summary

This research proposal is looking into the perceptions UK paramedics have on their role in managing a pelvic injury in the pre hospital environment. Currently there is no research on paramedics perceptions into pelvic injuries and their vital role in managing these injuries. The pelvic cavity has a vast amount of space for blood to haemorrhage into following a pelvic injury. 60% of these injuries are caused by road traffic collisions (RTCs) (Frakes & Evans, 2004) and on arrival at an emergency department the patient can have up to a 50% chance of mortality (Lee & Porter, 2006). The guidance given to UK paramedics by JRCALC (2009) suggests that an appropriate pelvic splint should be applied to the patient with a suspected pelvic splint. The guidelines reference suggested pelvic splints or circumferential pelvic belts to be used in this situation however very few ambulance services carry such equipment. Therefore it is the paramedic's decision as to what equipment on the ambulance such as a triangular bandage or a blanket could be used to replicate a pelvic splint (JRCALC, 2009). However these methods can lead to complications such as over compression of the pelvis (Krieg et al, 2006). This research proposes the use of UK paramedics to take part in a series of focus groups to gain insights into their opinions and experiences of managing a pelvic injury. This method allows for deep discussion within a group to ascertain the various different opinions each participant may have increasing the credibility of the suggested study. These opinions will be recorded and trends between them are made when analysing the data (Griffiths, 2009). The research will use 6 focus groups, one which will be a pilot test that will each have 12 participants within them. Purposive sampling will be used to increase confirmability and transferability of the results. 5 ambulance trusts across the UK will be represented in this study aiming to gain a wider variety of insights and experiences (Morgan & Scannell, 1998). After consent and ethical approval is gained the focus groups will be conducted by two moderators. Once the study is complete thematic analysis will be applied to the transcribed results and patterns will be recorded. The results aim to fulfil the objectives of the study and will be released to the participants, various journals and professional bodies. The results can be used to ascertain the best evidence based practice for patients in the UK., by possibly identifying training needs for UK paramedics.

Background

Patients with fatal pelvic injuries are at a higher risk of mortality due to exsanguinations. Around 60% of pelvic injuries are due to road traffic collisions (RTCs) and the remainder are mainly made up of falls (Frakes & Evans, 2004). In recent years there has been an increase in pelvic injuries due to the increased frequency of RTCs (Inaba, Sharkey, Stephen, Redelmeier & Brenneman, 2004). UK Paramedics guidelines advise any patient with a suspected pelvic injury is to be treated as a 'time critical' patient. The research within the guidelines suggests that an appropriate pelvic splint should be applied to the patient. However a majority of the ambulance services in the UK do not supply a specific pelvic circumferential belt and paramedics are left with the decision as to what piece of equipment should be used (JRCALC, 2009).

Literature review

This literature search used the databases PubMed and Cochrane. The journals taken into consideration were only those that were directly relevant to this study, and published from 1998. Several key search terms were used including; Pelvic injuries; Pelvic fractures; Pelvic splints; Pelvic fracture management; Pelvic injury mortality rates; Paramedics perceptions of pelvic injuries; Circumferential pelvic belts and Pelvic injury outcomes. No qualitative study relating to pelvic injuries and their management was found. (See appendix A for summary of findings).

Lee & Porter (2006) undertook a literature review to analyse the current practice of assessing and managing pelvic injuries. Mortality rates are estimated between 7% and 19%, upon the patients' arrival at hospital with a pelvic fracture. If the patients fracture is an open book fracture then mortality rates can be as high as 50%. This quantitative study looks at objective data does not take into consideration a paramedic's knowledge of how severe these injuries can be. A paramedic can help reduce the retroperitoneal space that the patient can haemorrhage into, and lower mortality rates. However some of the studies collaborated in this literature is not recent material and therefore questions the credibility of the review. This is a common problem with literature reviews, as medical research is always developing and older research is considered to be irrelevant and inaccurate (Shuttleworth, 2009). To ensure paramedics are using the best evidence based practice they

should be developing their knowledge by using up to date research and guidelines. For example the Cochrane Collaboration (2010) is a library, in which systematic literature reviews are constantly updated as new research is published. This ensures that all their reviews are concluded with the latest information.

A study published by Dong & Zhou (2011) looks at the management and outcomes from open book fractures for 41 patients. It also took into consideration other traumatic injuries not stated. The author's use an injury severity score (ISS), the higher the number the greater the amount and severity of trauma the patient has suffered. The average ISS was high suggesting most patients suffered poly trauma. Mortality rates remained high despite advances in the assessment and management of pelvic injuries in recent years. This is probably due to the poly trauma that has occurred to these patients, making the estimation of open book fractures and the chance of mortality they cause unreliable. To understand the true mortality rates from pelvic injuries, only patients with isolated pelvic injuries should be reviewed. Additionally the prehospital management of these patients is not mentioned, which could be a contributing factor to mortality rates, as paramedics may not be aware of the latest methods of treatment. Furthermore only 41 patients were used which questions the reliability of the study's results. A small sample size in quantitative research, can lead to the results being only statistically significant and not clinically significant. For the results to be clinically significant a larger sample size would be needed. Larger samples may indicate trends that are not recognised in smaller studies and establishes the results as fact rather than by chance, therefore increasing the credibility of the study (Lenth, 2001).

A larger study published by Tile (1988) looked at 494 patients that had suffered various different types of pelvic injuries. The sample size is larger than the previous study, making the results more significant, meaning they are more reliable to be used in a clinical setting. The ISS score of the patients in the study was found to be correlated with the mortality rates. This concludes that the pelvic injuries were not the only cause of mortality, as no trend between pelvic injuries and mortality rates can be identified. On the other hand Papadopoulos et al (2006) performed an autopsy based retrospective study on 655 patients with a pelvic fracture. These authors highlighted that pelvic injuries were not the only cause of mortality, but were a substantial contributing factor. This highlights the need for rapid and effective

pelvic injury assessment and management to help lower mortality rates. However neither of these quantitative studies took into consideration whether paramedic's were aware of this.

It is suggested that the secondary assessment of trauma patients should involve the log roll to assess the spine (Harris & Sethi, 2006). However Lee & Porter (2006) propose that patients with pelvic injuries should not be log rolled due to the risk of aggravating the injury and dislodging any clots. This will lead to further haemorrhage and a higher risk of mortality. It is a preconception of paramedics that trauma patients need to be log rolled onto a spinal board. Nevertheless even if paramedics do not practice this routinely due to the risks, there are many ambulances that have no orthopaedic scoops due to a lack of equipment. Litigations have been made against the ambulance service because of this and it may give the paramedic no choice, but to log roll their patient onto a rescue board, increasing mortality rates (Dobbie & Cooke, 2007).

'Springing' the pelvis to assess for pain or deformity is suggested in the American college of surgeons advanced trauma textbooks (NAEMT, 2004). This method is unreliable, it leads to clots being dislodged and exacerbating any injuries. Paramedics should use mechanism of injury and inspection as their main assessment tools. If a fracture is suspected then the pelvis should be splinted, however there is no research suggesting what splint paramedic's prefer (JRCALC, 2009). A study by Krieg et al (2005) concluded that a pelvic circumferential compression device effectively reduces pelvic ring injuries, and cannot over compress the fracture, which leads to increased mortality. A paramedic should use this device if available helping keep complications minimal, however not every ambulance is equipped with this piece of equipment.

Rationale

The research reviewed highlights how severe pelvic injuries are, especially open book fractures. The prehospital intervention for these patients is crucial to their survival and without the appropriate recognition, assessment and management then early hospital treatment can be ineffective. There are no studies at present that look at UK paramedics perceptions of their role in this crucial stage and whether they are aware of the mortality rates. The current research does not consider paramedics knowledge of pelvic injuries and how they manage them; whether paramedics are comfortable when dealing with these patients; and if paramedics are aware of the latest research and equipment used regarding pelvic injuries and the mortality rates. This research proposal therefore sets out to explore the significant gap in the literature.

By developing this proposed area of research a greater insight into paramedic's perceptions of their role in prehospital management of pelvic injuries will be gained. This may highlight suggested reasons as to why mortality rates are still high. The research may also help improve paramedics training into pelvic injuries, and their vital role, by highlighting any gaps in their knowledge and management that need amending.

Question

How do UK Paramedics perceive their role in the management of pelvic injuries?

Aim

To find out UK paramedics perception of their role in managing pelvic injuries

Objectives

1. To understand paramedics existing knowledge of pelvic injuries
2. To identify how a paramedic assesses and manages a pelvic injury
3. To explore how paramedics feel about using their existing knowledge and skills in managing pelvic injuries
4. To ascertain if paramedics are well informed of the latest suggested management of pelvic injuries
5. To find out if paramedics are aware of the mortality rates from pelvic injuries

Research design, methodology and method of analysis

Research design

Qualitative research is an essential part of health care literature and can access areas not applicable to quantitative research. It can capture participants' view points and explore their existing knowledge upon an area to gain new insights. Qualitative research is a prerequisite to quantitative research especially in areas where very little research has been undertaken (Pope & Mays, 1995). There are limitations to qualitative research and these have been considered, for example qualitative research has an inability to judge participants' perspectives against scientific criteria. It also can take a long period of time to collect the data, analyse it and interpret it. Furthermore generalising qualitative research findings can be difficult; however the rigorous method in this study will improve the transferability of these findings (Burns, 2000). Quantitative research on the other hand can have results that are generalised, the setting is very controlled, and it tests a hypothesis (Bruce, Pope & Stanistreet, 2008). These benefits may overcome the limitations listed above however quantitative research will not ascertain the perceptions of paramedics that this study is concerned with, and therefore won't fulfil the aim and objectives. This will jeopardise the dependability of the study, therefore quantitative method was not appropriate.

The question this research has introduced is aiming to gain an insight into paramedic's views of pelvic injuries and their management. Using qualitative research methods is the most appropriate way of answering the question. The methods most useful are interviews or focus groups. They delve into the personal opinions and experiences of those involved (Griffiths, 2009). Focus groups have therefore been selected as an appropriate method to answer the research question. Focus groups are comprised of small numbers of participants. The importance of a focus group is that it allows the interaction between the different members of the group, to provide an insight into their opinions and experiences through discussion. This may offer answers that another method such as interviews cannot, increasing the credibility of this research. This could be due to the nature of group discussion extracting information from each participant that the individual may not have thought

about on their own. This is one reason why interviews were not used in this research method (Roberts & Priest, 2010).

Focus groups commonly involve between 6 and 12 participants and a moderator. This proposal will aim to recruit 12 participants for each focus group to increase the discussion by gathering different insights. This will help increase the confirmability of the results (Stewart, Shamdasani & Rock, 2007) It is argued that the time allocated to focus groups means moderators often can't explore all the questions they are asked to with the participants. Therefore the moderator doesn't have a chance to build a rapport with the group and probe them as much to get the desired information. However a moderator that is genuinely interested in what the participants have to say; has a sense of humour, is animated and spontaneous and does not reflect their opinions upon the group (Stewart, Shamdasani & Rock, 2007). This will increase the chances of getting credible data. Employing an appropriate moderator is crucial to the research's credibility and transferability. This combined with fewer questions will allow the group to have a longer discussion, and develop more in depth answers, that will perhaps increase the dependability of the study (Stewart, Shamdasani & Rock, 2007). This will help the researcher ascertain the participant's real perceptions of the questions asked, and aim to provide a broader spectrum of answers.

The traditional design was to conduct focus groups until the researcher had reached the theoretical point of saturation. This is the point where you are no longer gaining new insights and therefore no more focus groups are needed. The researcher would suggest an amount they wanted to use and if new insights are still being achieved at the last focus group then more focus groups would be planned (Krueger & Casey, 2000). However this depends on the funds available as the more focus groups scheduled the greater the cost through room rental, refreshments and incentives. The higher the degree of diversity of participants needed the harder it will be to have a vast number of focus groups. Getting all the representative participants together at once may take some time. This may be due to the geographical areas they come from (Krueger & Casey, 2000). The average number of focus groups is between 4 and 6, however a small study may use less and a larger study may use more (GroupsPlus, 2008). This study will use 5 focus groups to gain the insights from the participants recruited. Not only is this the amount of focus groups used on

average but the cost to the research project is feasible. Additionally for the sample chosen (discussed later) it is a number that can be achieved realistically, and one which will aim to fulfil the aim and objectives of this study aspiring to increase the credibility.

Fern (2001) discusses the adequate length of time that should be allocated to each focus group. It is acknowledged that focus groups rarely last more than 2 hours due to the counter productivity after this time. However the first 30 minutes may be lost going from the globality stage to the information exchange stage. This may limit the insights gained in each focus group. It depends on the group characteristics and how successful the ice breaker stage at the beginning is. The ice breaker stage will be conducted over refreshments and will include the participants introducing themselves to each other and explaining a bit about themselves. This aims to increase the efficacy of the group and reduce the time needed to get to the exchange of information stage. Fern (2001) suggests that increasing the length of time of focus groups can overcome this limitation; however there are risks as previously mentioned to this strategy. Furthermore the participants may be put off volunteering if it will take up too much of their time. Also the participants that do take part may suffer from boredom, fatigue and irritation. This could decrease the productivity of the group and the dependability of the results (Burns, 2000). Consequently this research will allow for 20 minutes of discussion per objective with an effective debrief at the end of the focus group. This is so all the objectives can be reached without the participants becoming fatigued or bored, possibly increasing the credibility of the study. The debrief at the end will be a chance for feedback from participants, for the researcher to explain the data analysis stage, how the volunteers will be granted access to the results and to clarify any confidentiality and data protection questions (Burns, 2000).

A moderator cannot take notes and control the group on their own. Video recording the focus group comes with several ethical issues, some participants may decline and others may not give their full opinions and experiences. This may be because the participants do not wish to be identified or because they are embarrassed by being filmed. Therefore a second moderator (the researcher) is going to be involved in the focus groups to mainly note take. They may also need to intervene if the topic goes off subject without moderator one realising. This will

possibly capture insights that may have been missed by just one moderator, increasing the dependability of the study (Stewart, Shamdasani & Rock, 2007; Krueger, 1998).

Gibbs (1997) recognises that two moderators can be used in focus groups. However it needs to be clear to both moderators before the start of the focus group as to what their specific roles are. This is to ensure an effective focus group is run and therefore the objectives of the research can be achieved. Moderator one will be the moderator that asks questions to the group, prompts discussion, and brings the session to a close. They will also need to at times, subtly, put participant's views against each other to create a debate (Barbour, 2005). A moderator without opinions of their own on the research being undertaken is ideal so the results that are ascertained are as least bias as possible. If the moderator had strong opinions on this subject then they may influence what is being said and not allow for a fair discussion to take place. This may alter the transferability and credibility of the results (Barbour, 2005). Moderator 2 will sit outside of the group looking in, transcribing down what is being said as well as body language (David & Sutton, 2011). This is because moderator one will not be familiar with certain medical terminology and moderator two will pick up these terms and expressions, and be able to translate them into note form with greater efficiency. Also while moderator one is concerned with keeping the discussion on topic moderator two can focus more on taking notes. This will avoid any misunderstanding of the results, increasing the dependability of the research (David & Sutton, 2011).

Krueger (1998) highlights that undertaking a pilot test is the 'gold standard' for research however this presents a unique problem for focus groups, more so then for any other qualitative research. If the focus group fails then the reason to explain this could be hard to establish. For example the moderator lacks the inter-professional skills needed to conduct a focus group. It maybe that the environment the focus group was situated in was inappropriate not allowing the participants to relax and interact appropriately with each other. It may also be due to the focus group questions not being understood by the volunteers (Krueger, 1998). Therefore the dependability of the pilot test results is questionable.

Litosseliti (2003), on the other hand, emphasises the importance of using a pilot test to test several issues. Firstly the key points of discussion and the reaction of participants to certain questions can be identified and if needed, changed before the real focus groups take place. This may be due to the participants not understanding a question or withdrawing from it due to the nature of the question. Additionally an order of the questions can be devised in which the participants are expected to naturally progress onto following the pilot test. Krueger (1998) suggests that the true pilot study is the first focus group performed of the research; however this can be costly if it fails and has to be performed again. Therefore this study will not use this technique. The participants in the pilot test can provide the answers to the questions through group discussion and they can give feedback on various topics. This may include feedback on the questions asked, the recruitment strategies, incentive packages and logistic factors involved (Krueger, 1998).This will most likely increase the credibility of the study and the dependability of the results, as the focus groups that follow the pilot testing will be altered to increase their efficacy. Consequently this research study will embark upon a pilot study before the real focus groups are carried out.

Hennink (2007) states that monetary incentives have been frowned upon as participants may start to be expecting to be paid. Furthermore the quality of the monetary incentive may affect the information and behaviour the participant brings to the group, and this is can be inappropriate. However it can be difficult to recruit the exact number of participants without a monetary incentive as it is voluntary to participate in a focus group. The participants that are recruited are more likely to turn up on the day of the focus group if they have been offered an incentive (Hennink, 2007). This research will provide a voucher for each participant to be put towards personal equipment for their career. This incentive aims to reduce the limitation of using monetary incentives as it is appropriate for the participants. Refreshments will be provided on arrival to encourage the volunteers to engage successfully with the focus group. Continuous professional development certificates will also be awarded to each participant at the end of the day. This is with anticipation to help gather insights needed to fulfil the aim and objectives of this research (Hennink, 2007).

Focus groups have several limitations not previously mentioned. Firstly topics should not be selected that the participants don’t have an understanding of. Free

flowing discussion will not take place decreasing the studies credibility**.** In this study the participants will all be paramedics and have knowledge of the management of pelvic injuries (Litosseliti, 2003). This overcomes this limitation and will increase the confirmability of the results as the discussions should be thriving with different insights. Furthermore the participants in this group work perform different shift patterns and it will be difficult to get enough participants together at one time. This study aims to overcome this limitation by setting the dates of the focus groups well in advance making sure all participants can attend the sessions. If they can't then it allows time for them to perform a shift swap to get the day off (Litosseliti, 2003). This will ensure each group has the ideal number of volunteers to ascertain effective insights to answer the questions being asked.

Interviews are very effective at gaining an insight into someone's opinions and experiences too. The nature of interviews means these opinions and experiences can be delved into with substantial depth, as they are one to one with the participant and the researcher. So there is more of a chance to question the participant to gather further insights. In a focus group certain topics may arise that are very personal, and that are a sensitive subject to certain members of the group, and they may not contribute to the discussion. Whereas an interview where only the participant and the moderator are in the room, may encourage the participant to talk about the sensitive subject in this more private and confidential setting. It may possibly attain results that a focus group cannot and using interviews instead, or with focus groups is suggested to add credibility to a study (Denscombe, 2007).

However the method of using an interview for this study was rejected for several reasons. The focus group in this research will not involve questions that are likely to be regarded as sensitive or private to any of the participants. This should mean the participants contribute to all of the debates started, possibly gathering a broader spectrum of views. They are more flexible, the discussion between the participants may highlight information that the researcher may not have obtained in a series of interviews. This again increases the dependability of the results (Monette, Sullivan & DeJong, 2011).

Focus groups are generally more cost and time effective, for example, hiring a room will not have to be carried out as regularly for focus groups compared to

interviews. This is because no more than 5 focus groups will be used in this research. This will allow the researcher to save this money and use it elsewhere, therefore interviews will not be necessary for this study (Monette, Sullivan & DeJong, 2011).

The focus group must be set in a non-threatening environment. The setting can have an effect on the participants and the discussions that take place. It is recognised that focus groups should take place in a warm, comfortable, quiet room which has no visual distractions within it. This is to increase the concentration of the participants for as long as possible to gather the required insights (Bowling & Ebrahim, 2005). The enviroment must be neutral and away from any setting that again may influence the way the volunteers react in the group. For example the insights maybe different if the focus group was held at an ambulance station then if it was held in a bar, as the volunteers may feel more comfortable at a bar to give true insights. Also the focus group setting must be close to the trust the participants come from to avoid any non-arrivals (Stewart, Shamdasani & Rock, 2007). The focus groups in this study will be held in neutral conference venues at a nearby hotel or leisure centre to the trust. The group will be seated in a circle facing each other and all members of the group will have name badges on. This will enhance group interaction and arguably increase the credibility of the results.

The dynamics of the group can be negatively affected if participants within the group are acquaintances with one another. This may segregate certain members who do not know anyone possibly leading to limited responses from them. Personality clashes like this within the group may decrease the transferability of the results (Denscombe, 2007). A participant with a dominant or aggressive personality may have more input into each discussion changing the results and making them slightly bias to their views. However a participant with a laid back personality could not have much effect on the focus group. Again this could possibly alter the results. It will be impossible to know whether the participants that volunteer know each other and whether there will be personality clashes in the group (Denscombe, 2007). The moderator in this research will possess the skills needed to bring about group cohesion and good group dynamics too prevent these limitations affecting the end results. This should ensure the aim and objectives of the research will be met and the necessary information is extracted, increasing the studies credibility.

The aim of this study is to gain an insight into the perceptions of paramedics on their management of pelvic injuries, and therefore the sampling strategy does not need to randomly select a sample from all of the United Kingdom's (UK) ambulance services (Morgan & Scannell, 1998). This study will be using a purposive sampling strategy that will provide high efficacy levels for the group. This is due to the nature of focus groups being smaller than other research methods that may need more generalizations such as surveys. The sample selected just needs to have an insight into pelvic injuries and be able to take part in a discussion around them (Morgan & Scannell, 1998). This should be every paramedic in any UK ambulance service. The participants will be selected from 5 ambulance services that are spread around the UK, to possibly gather any geographical variation in the different types of management of pelvic injuries in each service. 12 participants per focus group is the desired amount for this study, this may increase the credibility of the study.

Recruitments issues, in particular non-arrivals, are arguably the biggest problems with focus groups. This study will aim to over recruit to avoid there being any focus groups that do not have the desired amount of participants. This will allow for a wider breadth of discussion increasing the dependability of the results, as the desired number of participants will be present. Additionally this study will remain in contact with the volunteers throughout the recruitment process to ensure their participation. A phone call to the volunteer the day before their focus group will also make certain of their participation and reduce the chances of non-arrivals affecting the focus groups results (Bloor, Frankland, Thomas, Robson , 2001).

Methodology

Initially the manager for each of the ambulance stations in all 5 of the trusts will be contacted and permission will be gained to recruit volunteers from their staff (see appendix C). Next an invitation will be put on these stations notice boards inviting participants to take part (see appendix D). An email and postal address will be provided for the paramedics that wish to volunteer to respond to. Volunteers are most likely to have strong views on the topic which may cause concerns as their views will possibly prevent other paramedics from giving their insights. This may cause volunteer bias and be a limitation to the study (Morgan & Scannell, 1998; Stewart, Shamdasani & Rock, 2007). However the role of moderator one is to try and

prevent volunteer bias happening, by encouraging all the participants to voice their opinions, and this will reduce the affects of this limitation on the credibility of the study.

The focus group will start with refreshments and an ‘ice breaker’ where each participant will introduce and explain a bit about their selves. Moderator one and two will do the same to increase group cohesion and to start a rapport with the group (Liamputtong, 2011). This aims to increase the group’s efficacy as they will all have contributed to a discussion already. Permission to record the group will then be gained and the objectives of the focus group will be stated. The group will be made aware that all opinions are valid and differences in opinions should be voiced (Stewart, Shamdasani & Rock, 2007). This will help increase the credibility of the study. The focus group will then start with moderator one using the predetermined, un-biased, questions (see appendix B for interview guide). These specifically designed open ended questions aim to answer the research question. The questions have been arranged in a logical order and the more emotionally intense questions have been left till the end. This will aid the strategy of the focus group and encourage greater in depth answers (Stewart, Shamdasani & Rock, 2007). However throughout the focus group moderator one or two may feel rephrasing the questions will help extract more relevant answers. Additional questions may also be asked including probing the participants to get further insights. This may include changing the order of the questions depending on the direction the focus group is taking (Liamputtong, 2011). This will aim to increase the credibility and confirmability of the study’s results.

The focus groups will have an audio recorder recording the conversations in case moderator two misses any key insights. The findings can then be repetitively played to gather all the information (Liamputtong, 2011). Tape recorders have been shown to alter the way in which the participants respond to certain answers. However in this study the participant’s permission will be gained before recording the focus group. It will be explained that the recording is just for ease of translation of the results and that they should not be concerned. This is to aid the natural flow of discussion and arguably increase the reliability of the results (Witte, Meyer & Martell, 2001).

Method of analysis

The First stage of analysis is to transcribe the notes from the focus groups including any information missed that the audio recorder didn't (Liamputtong, 2011). It's suggested that the researcher who made the notes should perform this stage of the analysis, as it will enlighten them as to what was said again, and reawaken any feelings they had about the results. This will help with the further analysis of the meaning of what has been said, and they may start to identify trends. This transcription should include all emotions, laughter, non-verbal communication and any 'slang' used by the participants. This may increase the confirmability of the results as the researcher is not transcribing what they believe a participant was trying to say. It is important to transcribe what each participant has said and not generalise the responses to the group (Liamputtong, 2011).

Thematic analysis is a method of identifying themes, analysing them and reporting theses trends for qualitative research (Liamputtong, 2011). The initial phase of transcription is undertaken (as mentioned above) and then the themes are coded. Codes are given to dialogue that has repeated patterns of meaning and these form the main categories of coding. It is then that the last stage of coding, the axial coding stage, can take place. This is where these main categories of coding can be linked to sub categories of coding, and themes across the data can be made. The analyst will read through the transcript several times to ensure all the emergent themes have been correctly identified. It is from these themes that the discussion and conclusions can be drawn upon to answer the research question (Liamputtong, 2011). This study will be using thematic analysis to increase the credibility of the study as it provides an accurate means of identifying themes, and presenting them logically.

Ethics

The British Paramedic Association (BPA) is a professional body that represent the profession of a paramedic. One of their roles is to provide advice and assistance on writing research proposals. They consist of a research and audit group that offer support in the form of peer reviews before submission of the research to ethics committees. Ethics committees now advice that all research is externally peer reviewed before submission, to assist the process. Advice from the BPA will be ascertained for this proposal (BPA, 2005).

This research proposal has used the Department of Health's (DOH) research governance framework (second edition). The proposal will ensure that the DOH's requirements regarding research are met, that any legislations are abided by and a high ethical standard is achieved throughout the research (DOH, 2009). The National Health Service's National Research Ethics Service (NHS NRES) is responsible for providing robust ethical reviews by research committees. Its aims are to protect participants in research and to facilitate and promote ethical research that may potentially benefit the public. This research proposal will be submitted to the NHS NRES to gain ethical approval (NHS NRES, 2011).

On the arrival of the participants to the focus group they will be asked to fill out a consent form over the refreshments period and sign it (see appendix E). This form is used to gain informed consent, and therefore the researcher will discuss with the group what is on the sheet, and what the focus group will involve, to make sure the consent is informed. Furthermore the participants will be reminded on the consent form and by the researcher on the day of the focus group that, at any point they can leave the focus group. The NHS NRES (2009) guidance was followed on producing the consent form. Consent will also be obtained from the station managers of the various stations the participants will have come from (see appendix C).

Beneficence will be maintained by protecting the rights of the participants (DOH, 1998) within the study through high standards of ethics approved via an ethics committee. Non-maleficence will also be upheld throughout the study and if at

any point it is endangered then the study will be concluded immediately (Ashcroft, Dawson, Draper & McMillan, 2007).

Confidentiality in focus groups needs to be maintained via special precautions. The transcription phase of the data analysis will use letters for peoples name to keep what participants said anonymous. The data will remain safely secure and the researcher and the moderator will be the only people to have access to it (Data Protection Act, 1998). The participants will be reminded of this on the day of their focus group. They will also be reminded that they must respect other participant's views in the group, and to not reveal the identity of who said what outside of the group. A debrief is included at the end of the focus group for these reasons (King & Horrocks, 2010).

Finally educational background, religion, race, age or sex will not be taken into consideration in the selection process. Therefore eliminating any discrimination or racism (King & Horrocks, 2010; DOH, 1998).

Dissemination

Wilson, Petticrew, Calnan & Nazareth (2010) recognise the importance of disseminating research findings and that a theoretical informed framework should be used as a guide, when disseminating findings. Therefore these findings will be submitted to the BPA, the Joint Royal College Ambulance Liaison Committee and the Health Professionals Council. These professional bodies all influence paramedic practice and should be informed of the research findings. Furthermore it is considered un-ethical and disrespectful to not to inform the participants of the study with the findings, so they shall all receive a copy of the research, including their station managers. A presentation will be produced so the study and the findings can help educate others at various conferences and lectures. Finally the write up and findings will be submitted to several medicine journals such as the Emergency Medicine Journal for publication.

Timescale

Task Month-	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12
Literature review																		
Designing the research proposal-development of instruments																		
Writing the proposal																		
Peer review																		
Making potential adjustments																		
Seeking ethical approval																		
Gain permission from station managers from selected trusts																		
Booking venue for focus groups																		
Recruitment of participants-information and consent																		
Pilot study																		
Making potential adjustments																		
Conducting focus groups-data collection																		
Data analysis																		
Writing up																		
Dissemination of research																		

Budget

Resource	Cost £	Quantity	Total £
Access to own laptop	0	1	0
Photocopying per page	0.05	749	37.45
Postage	0.46	77	35.42
Audio recorder	23	1	23
Name stickers-pack of 21	4.3	3	12.9
Pens-pack of 10	5.19	1	5.19
Paper-pad of lined paper	1.3	1	1.3
Refreshments	20	6	120
Voucher	10	60	600
Moderator one-per hour	15	18	270
Conference room-4 hour slot	60	6	360
Moderator one travel costs-car fuel	20	6	120
Dissemination costs – binding	4	65	260
Total			£1, 845.26

Photocopying

1 copy of proposal for ethics committee (26 sheets)

1 copy of proposal for peer review (26 sheets)

250 invitations (50 per trust-1 sheet each)

120 informed consent (1 sheet for participant 1 sheet for researcher (a copy))

2 copies of focus group schedule (1 sheet for each moderator)

65 final write ups for professional bodies, participants and journals (5 sheets each)

60 CPD certificates for participants

Postage

1 copy of proposal for ethics committee

1 copy of proposal for peer review

10 envelopes, 2 for each trust (containing 25 invitations each)

65 final write ups for professional bodies, participants and journals

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Appendix A

Data base	Research study	Methods	Findings used	Main Critique
Cochrane	Lee, C. & Porter, K. (2006). The prehospital management of pelvic injuries. *Emergency Medicine Journal, 24*(2), 130-133.	Literature review	Mortality rates are higher in patients with open book pelvic fractures-suggested management of patients with pelvic injuries	There was old research used in places-log rolling a patient with a pelvic injury can disrupt clots and increase mortality rates
Cochrane	Dong, J. & Zhou, D. (2011). Management and outcome of open pelvic fractures: A retrospective study of 41 cases. *Injury, 1(32),* 10-16	Retrospective review	Management and outcomes of patients with pelvic and poly trauma injuries	Small sample size, prehospital management not mentioned so this could affect the outcomes from pelvic injuries. Also the patients suffered poly trauma injuries so the outcomes were not just a reflection of their pelvic injury
PubMed	Tile, M. (1988). Pelvic ring fractures: Should they be fixed? *Review Article.* Retrieved March 17th, 2011, from http://web.jbjs.org.uk/cgi/reprint/70-B/1/1.pdf.	Literature review	The link between a injury severity score and mortality	Large sample size, showed a link between injury severity score and mortality rate in patients that had a pelvic injury as well as poly trauma injuries
PubMed	Popadopoulos, I., Kanakaris, N., Bonovas, S., Triantafillidis, A., Garnavos, C., Voros, D. & Leukidis, C. (2006). Auditing 655 fatalities with pelvic injuries by autopsy as a basis to evaluate trauma care. *Journal Of The American College Of Surgeons, 203*(1), 30-43.	Autopsy based retrospective study	Pelvic injuries in relation to mortality rates	Pelvic injuries were not the only cause for mortality in the poly trauma patient but a substantial contributing factor

PubMed	Harris. M. & Sethi, R. (2006). The initial assessment and management of the multiple-trauma patient with an associated spine injury. *Spine, 31*(1), 9-15.	Literature review	Secondary assessment of the trauma patient-the log roll	Trauma patients and especially those with pelvic injuries should not be log rolled though other literature suggest they can be
EMJ	Dobbie, A. & Cooke, M. (2007). A descriptive review and discussion of litigation claims against ambulance services. *Emergency Medicine Journal, 25*(7), 455-458.	Descriptive review	Litigations made against the ambulance service	Many litigations have been made due to a lack of equipment on ambulances-eg.orthopaedic scoops-forcing paramedics to log roll patients-if the patient has a pelvic injury this could increase mortality rates
Textbook	National Association of Emergency Medical Technicians. (2004). *Advanced trauma life support*. (7th ed.). Chicago: American College of Surgeons.	Textbook	Assessing the pelvic injury	The authors advise the 'springing' of a pelvis to assess for pain-other literature suggest other methods that contradict this
JRCALC	Joint Royal College Ambulance Liaison Committee. (2009). Major pelvic trauma. *New Guidelines.* Retrieved March 17th, 2011, from http://jrcalc.org.uk/newjrcalcguidance/pelvic_trauma_final210409.pdf.	Guidelines	Assessment and management of pelvic injuries	Springing the pelvis can dislodge clots and exacerbate injuries-therefore contradicting other studies
PubMed	Krieg, J., Mohr, M., Ellis, T., Simpson, T.,	Clinical trial	Circumferential belt used to splint a	Paramedics should use this

	Madey, S. & Bottlang, M. (2005). Emergent stabilisation of pelvic ring injuries by controlled circumferential compression: A clinical trial. *The Journal Of Trauma, Injury, Infection And Critical Care, 59*(3), 659-664.		pelvic fracture	device if available as it has been proven to reduce pelvic ring fractures which in turn can reduce mortality rates

Appendix B

- Ice breaker and refreshments
- Informed consent sheets explained-participants signature
- Question 1 - What existing knowledge do you have on the different types of pelvic injuries? (objective1)
- Question 2 – How would you manage/treat a pelvic injury? (obejective2)
- Question 3 – How do you feel about performing the tasks you have just described? (objective3)
- Question 4 – What existing knowledge do you have of the latest pieces of equipment used for pelvic injuries? (objective4)
- Question 5 – What do you think the consequences are of a pelvic injury? (objective5)
- De-brief
- CPD certificates and Vouchers handed out
- End of the day

Appendix C

Email:

Subject: Consent for research study

Dear _____ (Station manager)

I am writing to ascertain you're consent for me to invite members of your paramedic staff to a focus group I'm running. I am a Registered Paramedic and I am undertaking a qualitative research study to find out a UK paramedics perception of their role in the management of pelvic injuries. The study has been approved by an ethics committee and has been peer reviewed by the British Paramedic Association. The study aims to address the lack of literature on the perceptions paramedics have regarding pelvic injuries. The paramedics that are selected will attend a focus group at a specific time with 11 other paramedics and asked questions around this subject. Each participant will receive a CPD certificate for their portfolio's and a £10 gift voucher to be used on personal equipment for them. Refreshments on the day will also be provided along with an opportunity for your staff to learn from others.

If you consent to my request I will send the various stations under your supervision invitations that can be put on a notice board and circulated to the staff by a member of your team if possible. They will need to reply to myself via an email or postal address using these invitations. From here the participants will be contacted by myself.

I will greatly appreciate your co-operation and look forward to your reply to my request.

Yours sincerely,

Richard Ward HPC Registered Paramedic

Appendix D

Invitation

To: (Station name)

From: Richard Ward HPC Registered Paramedic

Subject: Research participation offer

Dear Colleagues,

This invitation offers you the chance to participate in a study into the perceptions of a paramedic regarding the role they have in managing a pelvic injury. You will be asked to participate in a focus group with 11 of your colleagues, to answer questions asked by a moderator resulting in a group discussion. The research is being carried out due to the lack of research into the perceptions paramedics have of their role in managing a pelvic injury. It is an injury most trusts do not provide appropriate equipment to deal with and an injury that is not always visible from inspection. Therefore it is important to find out paramedics perceptions dealing with these injuries and how competent they believe they are. **It may be that training updates and new pieces of equipment need to be issued if paramedics don't feel competent in this area**. This piece of research will be a part of the ever growing importance of evidence based practice and will strive to enhance the care UK paramedics provide.

The focus group will be held on (Date) at (Time) at (Location).

On arriving on the day refreshments will be provided, informed consent will be attained and the day itself will be explained in more detail, and any questions will be answered. There will be an 'ice breaker' to start then the focus group itself will commence. It will last approximately 3 hours with a debrief at the end included in this time. The debrief will include any further questions you have. The focus group will be audio recorded for ease of collecting data and your views will be anonymous. Each participant will be rewarded with a CPD certificate, a £10 voucher towards personal equipment for your career, and a copy of the write up of the study. Each participant will have the right to withdraw at any point.

If you are willing to participate in this research or you have any further questions then please either write to or email me. Please provide your full name and contact details (including an email and/or a postal address you will prefer to be contacted by).

(Email address) (Postal address)

Thank you for your time,

Richard Ward HPC Registered Paramedic

Appendix E

Consent Form

Title: The management of pelvic injuries in the pre hospital environment. A qualitative study.

Name of researcher: Richard Ward

I understand that every precaution has been taken to protect my identity. I have had the opportunity to read this consent form, ask questions, and had these answered satisfactorily. I understand that my participation is voluntary and I can leave at any point without reason. I give my consent to participate in this study. I have read and understand the following information;

This study has been developed through the lack of research on UK paramedics perceptions on the prehospital management of pelvic injuries. The results from this study will aim to help improve the care patients receive who have sustained pelvic injuries as it may highlight training needs and further equipment purchases by ambulance trusts in the UK.

This study involves you taking part in a focus group with 11 other paramedics from your trust. You will be audio recorded solely for the purpose of recording the correct data and your views will be anonymous throughout. Furthermore what you say will be written down on a script by the researcher, again keeping your views anonymous. **However if another member of the group does not keep your views anonymous, despite the researcher asking them too there is nothing that can be done to prevent this**. A moderator will ask the group open ended questions and the participants within the group and you will be expected to answer the question with discussion with one another. The session will last approximately 3 hours and will include a debrief at the end to answer any questions you may have.

If you still wish to participate in the study please sign and date below and hand this sheet in to the researcher. A photo copy will be given back to you.

Name (Participant) (Date)

Signature (Participant).....

Name (Researcher) (Date

Signature (Researcher).....