International Emergency Nursing 42 (2019) 25–29

Contents lists available at ScienceDirect

International Emergency Nursing

journal homepage: www.elsevier.com/locate/aaen

Patient experiences of initial trauma care☆

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ARTICLE INFO

Keywords:
Patient experience
Trauma team
Injury
Interview
Content analysis

ABSTRACT

Background: Correct initial treatment of trauma patients reduces mortality and morbidity. However, the initial examination may be perceived as traumatic because of the stressful situation, the unfamiliar setting and the shock of being seriously injured. To date, little is known about patient's experiences of initial trauma management. The aim of this study was to explore trauma patients' experiences of being exposed to initial full trauma team assessment at a Level 1 trauma centre.

Methods: Interviews with 16 patients who had been exposed to initial trauma care were conducted at a Level 1 trauma centre, at a Swedish University Hospital. The interviews were transcribed verbatim and analysed with qualitative content analysis.

Results: Patients' experiences of initial trauma care can be summarized as: feeling safe in a frightening situation. The trauma team members were mostly perceived as professional, well-organised, and efficient. Yet, the patients described an emotional response to the trauma, physical discomfort during the examination, and feeling prioritised or being ignored in the encounter with the trauma team members.

Conclusion: The initial trauma care may be improved if the trauma team members keep the patient's physical and emotional wellbeing in focus and maintain an informative dialogue with the patient during the whole process.

1. Introduction

Serious injuries due to traffic events, falls, and assaults are the most common cause of death in young people in Sweden [1]. Correct initial treatment of trauma patients is important for reducing short-term as well as long-term mortality and morbidity [2–4]. In order to improve and further develop high-quality trauma care, trauma centres need to review their activities continuously and patients' experiences should be mandatory in such an evaluation [5]. Up to date, few studies have investigated patients' experiences of initial trauma care and there is a need to include a more qualitative approach into trauma research [6].

2. Background

In some hospitals, the trauma victims are taken care of by the emergency department (ED) staff at the ED. Most trauma centres however, have a two-tiered trauma system, where a full trauma team at the highest level of care examines seriously injured trauma patients in a special trauma unit, and a limited team at a lower level of care treats less seriously injured trauma patients in the ED [7–11]. According to the Advanced Trauma Life Support (ATLS) concept, full trauma team activation includes a rapid and extensive physical examination of the patient in the trauma room [12]. The examination, that is taking place in a high-technological environment and sometimes includes being treated by more than 15 health care professionals at the same time [5], together with the stressful situation of being seriously injured [13], can be experienced as traumatic. Existing studies on the topic have been focused on trauma examination at the ED [13–16] and currently there is a paucity of information on how patients experience being taken care of by a full trauma team in a specialised trauma unit. Therefore, we conducted a qualitative study to explore trauma patients' experiences of being exposed to initial full trauma team treatment at a level 1 trauma centre.

Abbreviations: ASA-PS, American society of anaesthesiologists physical status classification system score; ATLS, advanced trauma training system; CT, computed tomography; ED, emergency department; IQR, inter quartile range; ISS, injury severity score; TNCC, Trauma nursing core, course

☆ *An interview study at a Swedish level 1 trauma centre.*

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https://doi.org/10.1016/j.ienj.2018.08.003
Received 17 May 2018; Received in revised form 21 August 2018; Accepted 29 August 2018
1755-599X/

3. Method

3.1. Design and setting

A qualitative study was conducted at a level 1 trauma centre situated in a university hospital in Sweden. The hospital covers the Stockholm area and serves about 2.5 million inhabitants. Approximately 1500 injured trauma patients are admitted to the hospital annually among which about 30% are seriously injured, with an injury severity score (ISS) > 15 [17]. The median age of these patients are around 40 years ranging from 18 years of age up to the very old. Approximately 70% of the trauma patients are men. Blunt trauma is more common than penetrating trauma (90% versus 10%) and road traffic events represent the most frequently seen injury mechanism [18].

3.2. Participants

Patients were included in the study if they were ≥18 years, Swedish speaking, treated at the trauma unit at level 1 priority and willing to share their experiences. Patients who were comatose or sedated during the initial trauma treatment which prohibited recall from the trauma room were excluded. Patients who were transferred to other units were also excluded.

Participants for the study were selected by the head-nurse at the trauma ward – where the patients were treated after the initial trauma assessment. The head-nurse was well informed about the purpose and method of the study. If there was a potential participant, she contacted the researchers who asked the patients in person if they were willing to participate in the study. All patients received oral and written information about the study. The interviews were conducted in the first days after the initial trauma examination. Out of 20 trauma patients, 16 consented to participate. Among those, 14 patients had low levels of pre-injury comorbidity and suffered from minor injuries (Table 1).

3.3. Data collection

Individual interviews following a semi-structed interview guide (Fig. 1) were conducted by the first author (AG, PhD student) between September 2016 and May 2017. To confirm that the questions addressed the right aim of the study, a pilot interview was conducted. The pilot interview was discussed with an expert in qualitative interview technique and since it contained valuable information the pilot interview was included in the study. Laddered and probing questions was used as guideline during the interviews [19]. All interviews were performed in a secluded room at the trauma ward. The interviewer has experience in working with trauma patients and was trained in interview technique. No other person was present during the interviews. Inclusion lasted until no new information was obtained. The interviews lasted for 7–17 min and were audio-recorded and transcribed verbatim. Patient characteristics and trauma-related information such as gender, age, pre-injury comorbidity presented as American Society of Anaesthesiologists Physiological status (ASA-Ps) [20], ISS [17], injury type and injury mechanism were retrieved from each patiens medical record.

Table 1
Characteristics of the patients.

Characteristic	Participants (N = 16)
Men	12 (75%)
Age in years, median (IQR)	32 (26–50)
ASA-PS 1–2	14 (90%)
ISS median (IQR)	10 (5–14)
Injury type[1]	
Head/Neck	8 (50%)
Facial	1 (8%)
Chest	8 (50%)
Abdominal	4 (25%)
Pelvic	2 (13%)
Extremity	9 (57%)
Superficial	8 (50%)
Dominating type of injury	
Blunt trauma	12 (75%)
Penetrating trauma	4 (25%)
Mechanism of injury	
Traffic	8 (50%)
Fall	4 (25%)
Assault	4 (25%)

Numbers are number and proportion (%) or median and interquartile range (IQR).

[1] More than one type of injury for some patients, ASA-PS, American Society of Anaesthesiologist physiological status (1–6), ISS, Injury severity scale (1–75).

3.4. Analysis

The transcribed interview text from the interviews was analysed by two of the authors using inductive content analysis according to Elo and Kyngäs [21]. The text was read through several times by the members of the research group, to grasp the whole content. Meaning units, consisting of sentences or paragraphs were identified, grouped according to similarities and systematically coded into categories. Each category was named after content-characteristic words. The categories were discussed between all authors (AG, LS, A-CF, AS), during the process to establish trustworthiness [22].

3.5. Ethics

The interviewer was not directly involved in the patient's care. If the interview raised thoughts or emotions that were perceived as burdensome for the patient, he or she was offered the opportunity to meet a psychologist. All included patients gave written informed consent to participate in the study. Ethical principles regarding consent, information, confidentialities and utility were taken into account [23]. The study was approved by the Regional Ethical Review Board in Stockholm (Dnr 2015/2269-31).

4. Results

The qualitative analysis resulted in one main category: feeling safe in a frightening situation and three generic categories; emotional response, physical discomfort, and feeling prioritised or being ignored (Fig. 2).

4.1. Feeling safe in a frightening situation

The patients stated that their first impression of the trauma management was that when they arrived at the trauma room, there were many people waiting for them. Some patients were surprised while others had been prepared for this by the pre-hospital staff. Many patients perceived the situation as frightening, since they interpreted it to mean that they were seriously injured. However, it also created a sensation of an efficient organisation where seriously injured patients were carefully examined: *"It was a lot of people, but they worked efficiently and were very considerate and caring" (P12)*. However, others questioned whether the high number of trauma team members was necessary: *"it was not necessary that all these people had to examine me at once… (P09)*.

The way the trauma team members worked together and seemed to understand each other with few words contributed to creating a secure environment for the patients: *"They collaborated well. They did not talk so much but still understood each other. Communicating without speaking, it made me feel rather safe" (P12)*.

The patients mentioned professionalism and good team-work:

Can you tell me what you remember from the trauma room?

1. *How did you experience the first examinations?*
2. *Were there any positive experiences?*
3. *Were there any negative experiences?*
4. *How did you find the information you received?*
5. *Can you tell me something about the trauma team, the nurses and doctors, how did they act?*
6. *How was the atmosphere/environment in the trauma room?*
7. *How did you find the communication with the trauma team members?*
8. *Is there anything else you would like to tell me?*

Fig. 1. The semi-structured interview guide.

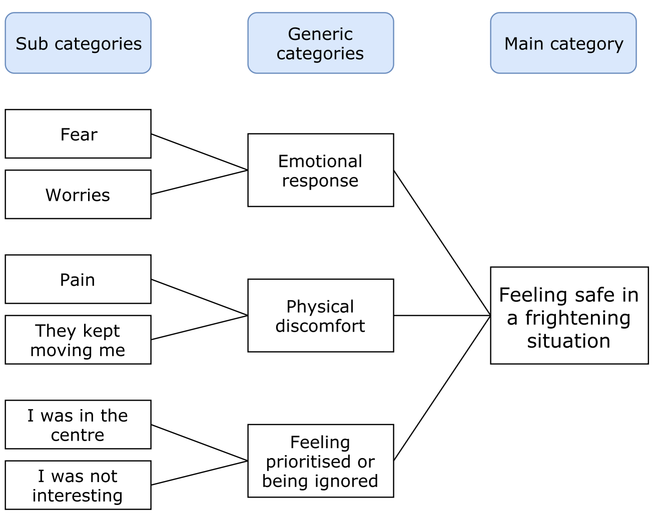

Fig. 2. Flow-chart of sub-categories, generic categories and the main category.

"*Everything that they did, seemed to go like clockwork. Everyone knew exactly what to do" (P05). "There was a good team spirit…everyone acted professionally" (P14).*

There were also "other people", present in the trauma room, people who did not seem to directly participate in the care and treatment. The patients concluded that they were observers or students: *"There were people standing in the background. They seemed to be students because they were observing and taking notes" (P12).*

4.1.1. Emotional response

Apart from feeling secure and cared for, experiences of fear and worry were expressed by the patients. Their thoughts and emotions concerned their present life-threatening situation, but also what would happen to them in the future: *"I was thinking about the possible consequences of my injuries. What will happen with my back now and …what will happen in the future, what will become of me, will I be able to work or… such thoughts were spinning around my head" (P14).*

The patients were not only worried about the consequences of their injury and how these would affect their future but also how they would influence their families: *"I was thinking if this guy kills me…what will happen to my children?" (P15).*

One patient said that the situation felt unreal at first, but after a while he realised that this was a real and serious situation: *"You think this only happens to others and… on TV shows, but this was actually happening to me right now. It was a wake-up call. Shit! I am really lying here on a stretcher and people are inserting tubes into my lung" (P08).*

Fear was mostly expressed as generic and not related to a certain situation. Some patients actually feared for their lives: "*For a while, I really thought this was my last night in life" (P08).* One patient said that she was screaming out loud in panic: *"I screamed, I am going to die" (P15).* This patient was afraid that the man who assaulted her would come after her again*: "I was thinking…I can see him… he is coming after me…" (P15).*

Another patient was angry with the people who had assaulted him: *"I was so damn pissed off, Ím going to kill them (the aggressors) (P13).* Most patients realised what a life-threatening situation they had been in and were relieved that they had survived and were now being successfully treated: *"You cańt understand how pleased I am…it cańt be explained how damn pleased I am, I mostly feel a sort of joy" (P13).*

4.1.2. Physical discomfort

The patients arrived at the trauma room with a stiff neck-collar and were placed on a hard-spinal board, in order to protect their spine until a thorough examination was made. This was described as uncomfortable, but they accepted it: *"I was in shock, tied up…I was tied up. I came in the helicopter and in a stabilising…and a stiff neck-collar, I could hardly move… so just being tied up like that was rather uncomfortable" (P16), "It was a relief to be released from the board" (P16).*

Many patients suffered from severe pain caused by their injuries. They also complained about painful procedures, such as when their clothes were being removed, during examinations and while being transferred from one bed to another, upon arrival to the trauma room, while being transferred for the CT scan and finally moved to a bed: *"They kept moving me from bed to bed, first onto the spine board and then off the spine board and then…Well, it was back and forth and pillows here and there and they kept twisting and turning me. It was very, very painful" (P12).*

These procedures were not only uncomfortable but also sometimes unorganised and troublesome: "*They kept moving me from one stretcher to another" (P03, P12), "They were having serious problems with the wires" (P05), "it was all messed up" (P06).*

However, the patients understood that under these circumstances, the procedures were inevitable.

Two of the patients mentioned the digital rectal examination, that is a mandatory part of the examination to exclude spinal injuries - and said to the doctors: "OK, just do it".

4.1.3. Feeling prioritised or being ignored

All patients were highly attentive to the trauma team members' actions and behaviours and listened carefully to the communication that took place in the trauma room. The way the trauma team members were concerned about the patients' wellbeing seemed to contribute to the feeling of being prioritised*: "They kept asking me how I was, 'How are you?' I was freezing a lot, so they brought me warm blankets. One person came to me with a warm water bottle that I could put on my stomach. I was really cold. They were concerned about that all the time and told those who arrived that "She is cold" (P04), "I trusted those who held my hand and talked to me…" (P08).*

The trauma team members were perceived as caring, comforting and concerned: "W*hen the doctor entered the room, he told me "You will be alright", "You will run again", "We will take care of you", "You will be well again*" *(P15).* They appreciated that the trauma team members understood their discomfort and tried to ease the pain and give comfort: *"I was just in terrible pain all over…they gave me morphine and pain-killers and so on… so they understood…they tried to ease my pain"* (P10).

> *"…I was able to get rid of the stiff collar. It felt very good that they checked the x-ray rather quickly because they noticed how bothered I was by the collar" (P12).*

Most patients talked about being prioritised in a positive way: "*It was good that there were many people there; it meant that I was treated as a priority case" (P08).*

They also reported that they had a good dialogue with the trauma team members and that they were listened to: "*The anaesthesiologist talked to me all the time" (P08).* They were also positive about the information they received and stated that the amount of information about their injuries was sufficient.

However, some patients experienced that they did not have any personal contact with the trauma team members. The trauma team members were only talking to each other*: "I could hear what they were saying but it was as if I wasńt there …I didńt have contact with anyone" (P07).* It seemed that some patients felt that their injuries were not taken seriously by the trauma team: *"I think that they (the trauma team members) are so used to this kind of work …but at the time it did not feel right that someone laughed…I was lying there in pieces …half a corpse…so it was not OK… I was not in the mood to hear someone laugh…but still for them it was a normal day at work…, I dońt think they reflected about that, or even realised that I could hear what they were saying …" (P08).* The patients recognised that the initial trauma management was a routine for the trauma team members. They stated that there was a strange contradiction, since they feared for their life: *"For them it was a normal day at work, but I thought I was going to die, that it was my last night of life" (P08).*

Some patients felt excluded from what was going on since the trauma team members sometimes used words that the patients could not understand: *"I noticed that it was someone who…if it was…well someone who was in charge and explained what happened…but he was talking to the other trauma team members in a language I didńt understand" (P11).*

It was also stated that the examination ended abruptly. After the examination the trauma team members just left, which made the patient feel abandoned: *"It was all over very fast, then they were off to the next thing…I wanted…to say thank you for the help…but it was difficult because…everyone had just disappeared…" (P14).*

5. Discussion

This study showed that most patients were satisfied with the initial trauma care treatment. They described the trauma management as professional, well-organised and efficient and the trauma team members mostly as caring supporting and coaching. However, painful procedures, being scared and worried about their injuries and how this would affect their future life, and being ignored and treated impersonally were also among the patients' experiences.

Previous studies have shown that patients experienced fear and worry during resuscitation in emergency departments and during prehospital care, but that the efficiency and professionalism of the hospital staff created a sense of security [13,14,24,25]. These results are in line with the findings of this study, where patients stated that the efficiency of the organisation and the professionalism of the trauma team members contributed to creating a safe environment.

Still, upon arrival at the trauma room, most patients were afraid. Fear was experienced as worries or panic. Caring actions, such as a comforting word or bringing blankets and warm water bottles to cold patients were highly appreciated and contributed to reduce their anxiety. Patients' need for empathy and support are as important in the acute trauma care as in other settings [13,15].

Almost all patients described transitions from stretchers and beds as painful but still as understandable and acceptable. This is valuable information for the trauma team members. Unnecessary transitions can probably be avoided through improved communication between the trauma team members. Wright et al. found that patients accepted all kinds of procedures, even painful ones, such as placements of intravenous catheters if they understood the medical necessity of these [16]. In the present study, every patient was exposed to radiation from the CT scan. Surprisingly enough, no one questioned whether this was necessary or not. In concordance with this, Wright et al and Ringdal et al. showed that in acute situations, patients tend to hand themselves over to the health care personnel and that trauma team members' judgement are seldom questioned [16,28].

In concordance with other study results, the trauma team members were described as caring, supporting and coaching [13–16,27]. However, it is alarming that some patients felt ignored or even abandoned. It might be assumed that some team members have not fully realised that the patients were awake, observing and listening carefully to what was going on. This shows a need for the trauma team members to be more perceptive of the patienťs shifting needs and emphasise the importance of a good communication between the individual patient and the trauma team members [13]. A first and relatively easy achieved step in applying a person-centred approach is that all trauma team members introduce themselves to the awake patient [27]. Clarity regarding injuries and prognosis is also important for the individual patient [27]. In the present study, most patients reported that, at an early stage, they were well informed about their injuries. However, a few patients felt excluded from the discussions when the trauma team members were talking to each other and not addressing the patient. Kaufman et al. have shown that poor communication may lead to misunderstanding about the severity of injuries. They concluded that if the patients are involved in the discussion, they have the possibility to make a correct judgement of their current status and this may also strengthen the relationship with their caregivers [27]. This may in turn result in positive memories from the trauma room, and may improve the patients' long-term outcome [15,28,29]. After the examination had ended, and the

trauma team members had left, some patients said that they felt abandoned. From a team member perspective, when no serious injuries were identified during the examination, their task was completed. However, this might not have been clearly communicated to the patients, who did not understand why everybody suddenly left the room. Most patients' goals are to be treated correctly in an efficient way but also to participate in their own care and to understand what will happen to them, through the whole trauma care system and how this will affect their life in the long term [27]. For the trauma team members, the focus is to rapidly find life-threatening injuries in seriously injured patients. These differences in goals might be overcome if the trauma team members keep a person-centred focus during the whole trauma assessment. A previous study showed that more seriously injured patients rated their care higher compared to patients with minor injuries, and less seriously injured patients were less satisfied with the communication with trauma team members [26]. In this study, most patients were over-triaged (with an ISS below 15) and could have benefitted from a less active care since they were not seriously injured. If trauma patients are treated at the correct care level, their experiences may be more positive.

This is a single-centre study with Swedish speaking participants only. The findings of this study indicate that patients are mostly satisfied with their care during the initial trauma management. However, there is room for improvements such as increased patient focus and involving the patient in discussions [27]. This can be challenging considering the importance of the rapid response in the concept of ATLS and the uncertainty about the patients' injuries when they arrive at the trauma room. However, the patients' psycho-social condition, which starts after identification and treatment of life-threatening injuries, can be as important as their physical status, depending on severity.

The findings of this study can add new knowledge about patient experiences in a specialised trauma unit. A semi-structured interview guide with probing questions was used with the guidance of an expert in interview technique. In order to reduce the risk that other events would influence their experiences the interviews took place shortly after the event, while the patients were still in the hospital. The interviews were rather short (7–17 min) but taking into account the short time the patients were assessed at the trauma room the time was reasonable and the interviews ended when the participants had nothing more to add. However, it cannot be ruled out that a more in-depth approach of the questions could have contributed to an increased richness of the data.

6. Conclusion

The patients who had been exposed to initial trauma management found that despite the frightening situation in the trauma room they felt secure. Many patients were afraid and worried about their injuries and how they would influence their future. They also stated that they suffered from physical discomfort or even pain during the examination. Most patients felt that they were prioritised, while some experienced that they were excluded from the conversation that took place during the assessment. A continuous focus on patients' physical comfort and emotional wellbeing during the whole period in the trauma room, without compromising with safety, is needed. To increase patient satisfaction, the trauma members need to learn how to 1) better handle patients' fear and worries 2) if possible reduce the number of painful procedures and 3) improve the personal encounter.

7. Authors' contributions

The study was designed by AG and AS. Data were collected by AG. Data analysis was performed by AG, A-C F. The manuscript draft was written by AG. Tables and figures were prepared by AG. All authors interpreted the data, and critical revision of the manuscript was also performed by all authors AG, AS, A-C F, LS. All authors have read and approved the final manuscript.

8. Conflicts of interests

None declared.

9. Ethical statement

The study was approved by the Regional Ethical Review Board in Stockholm. Ethical approval number: Dnr: 2015/2269-31.

10. Funding source

None.

Acknowledgement

The authors would like to thank the respondents who participated in the interviews. The manuscript has been proofread by an English native-speaking professional at Anchor English.

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