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Emergency staffs perspectives of patients and family members needs and suggestions towards improved patient pathways - a qualitative study

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Abstract

Objective: Besides working in a fast-paced environment, healthcare professionals in the emergency department are required to promptly respond to patient's needs as well as achieve their organizational goals, which can be challenging. This study investigates how healthcare professionals perceive and support the needs of patients and family members discharged within 24 hours.

Design: The study used focus group discussions. The text material was analyzed using systematic text condensation.

Setting: Data were collected from two large Emergency departments in Denmark.

Participants: 16 health care professionals were purposively sampled to participate in three focus group discussions.

Results: Three main themes were condensed: (1) creating a trustful relationship (2) responding to family members: a bother or a benefit, and (3) working as an interdisciplinary team. The study indicated the need for increased interdisciplinary collaboration to reduce discrepancies in information, meet patient and family needs, and deliver a holistic approach. A technical solution was suggested to facilitate collaborative teamwork.

Conclusion: The study pointed at an existing gap between emergency healthcare professionals' perceptions of patient and family members' needs, and the provision of the current patient and family support. Suggestions for a future intervention include focusing on the interdisciplinary teamwork, facilitated by a technical solution to support a person- and family-centered informative approach.

Strengths and limitations of this study

⇒ The qualitative approach allowed us to gather in-depth knowledge in an under-researched area within emergency care.

⇒ The interviews were thoroughly analyzed to define the three overarching themes and quotations support the trustworthiness of the findings.

⇒ The limitation of this focus group study was that the participants were recruited from two Danish hospitals, therefore, findings are contextual and reflect a Danish context.

⇒ The methodology limits generalization, although we obtained theme saturation and thoroughly described the context of the study

Introduction

International guidelines have highlighted the need for an effective treatment plan within 4 hours to prevent overcrowding in emergency departments (EDs) [1]. This requires a systematic and focused approach by healthcare professionals (HCPs) [1]. HCPs employed in the EDs are aware of the importance of productivity, with high patient flow as one key element in the organizational structure [2, 3]. Besides working in a fast-paced environment, HCPs should be able to promptly respond to patient's needs to improve care in the ED [4, 5]. Research on patients' perspectives has shown [6, 7], that communicating in an ever-changing environment with many interruptions might affect patients' feelings of reassurance [6], and challenge their ability to understand given information [7]. Patients experienced that communicating with HCPs was principally a one-way conversation, with a medical discourse and without the possibility of asking questions [7]. Moreover, encounters with HCPs were often fragmented, with many interactions and much information over short periods [8-10]. Studies on ED HCPs perspective find that inadequate communication and not addressing patients' needs may cause patient readmission [11-13]. ED staff have a lot to balance, as they strive to achieve organizational goals, create caring encounters, and acknowledge patients' individual needs [14].

The involvement of family members to improve patient outcomes in general is acknowledged in healthcare worldwide [11, 15]. Family inclusion and partnership strengthens patients' readiness for discharge [13]. However, research has demonstrated that patients and families perceive staff-patient interactions in the ED as inadequate, leading to the reduction of family involvement [12, 16]. A culture supporting inclusion of the voices of patients and families in the ED requires the organization to move away from a hierarchical expert approach towards a person- and family-centered approach [17, 18]. An in-depth understanding of current practices combined with identifying potential obstacles is important to prevent patients from having unmet needs by the time of discharge [19]. When striving to understand the implications of the current practice in suggestions towards informing improved ways for future care it is essential to investigate the perspectives of the users of the clinical field [20]. This study investigates how HCPs support the needs of patients and family members discharged within 24 hours of admission in an ED.

Objective

The aim of this study is twofold:

- To investigate how HCPs in the ED perceive the needs of patients and family members discharged within 24 hours and
- To explore in which way these can be supported in organizing improved patient pathways.

Methods

Study design

This study is part of the first phase of a three-phase participatory design study, with an overall aim to improve the experiences of patients and their family members discharged from the ED within 24 hours [21, 22]. Participatory design is a research methodology where involvement of representatives of future end-users of the research field is a core element [22]. In short, phase one in PD studies conducted in health science focuses on uncovering and understanding needs and practices [23, 24], whereas phase two and three focus on developing and testing a solution to cover the needs identified in phase one. The principles of phenomenological investigation are traditionally used in the initial phase of PD studies [23, 25] and have inspired the data generation in this study deriving from focus group discussions with nurses and physicians. Data generated from encounters with patients and their family members have been presented in another not yet published study (In review BMJ Open). Focus groups were chosen to produce a rich understanding of participants' experiences and beliefs and generate knowledge from the interactions between the participants [26]. The Consolidated Criteria for Reporting Qualitative Research were used as a checklist [27].

Settings

HCPs attending the focus groups were recruited from two EDs: (1) Odense University Hospital, which is a 1000-bed university hospital, provides care for a population of 230,000 adults living in the Region of Southern Denmark. The ED has 69,000 annual attendees and 150 and 20 permanently employed nurses and physicians, respectively. (2) Hospital of Lillebaelt is a 320-bed hospital. The ED has 50,000 annual attendees and 150 and 14 permanently employed nurses and physicians, respectively.

Participants and recruitment

HCPs in the focus groups were enrolled by email, sent from the management of the departments, containing information regarding the study. The process of creating the focus groups included the idea of a heterogeneous group to ensure variation in age, qualifications[26], and personality, in order to improve discussions and outcome [28]. This was discussed by the first author with the staff manager, who knew her staff well and purposively asked participants by email if they would like to be part of the study.

Eligibility criteria*:* Nurses and physicians who have been employed at the Emergency department for more than 6 months.

Sample size*:* Three focus groups, with three to seven participants per group were formed [29]. Due to the COVID-19 restrictions, participants from the two sites were not combined.

Data collection

Data were sampled by the first, second, and last authors. The research team was a group of experienced qualitative researchers and clinicians. The first author was an experienced emergency clinician. The second and last authors had no recent experience with emergency care.

The three focus group discussions were conducted in December 2020. The first author facilitated the focus groups. The second or last author observed, wrote notes on interactions and non-verbal language etc., and validated the content of the discussion. Each focus group discussion was split into two parts. Initially, the participants were asked to write three positive and negative thoughts on treating and caring for patients discharged from the ED within 24 hours. Then, they discussed their perspectives and possible ways to optimize the care. In the second part, participants were introduced to quotes and findings from the above mentioned study on patient and family member perspectives (in review BMJ Open). The discussions then commenced with the participants' thoughts on these findings. An example of a quote is 'I need them to take the burden off my shoulders'.

This encouraged discussion of how to address patients' and family members' needs, with a focus on possible differences and similarities in HCPs' perceptions of quality in treatment and care. The discussions lasted 1–1.5 hours. One was held at the ED in Kolding and two in Odense. All focus groups were recorded and transcribed verbatim by the first author. Notes taken from the observer were also included as data in the analysis.

Patient involvement

This study had no direct patient involvement. However, the local patient and family member council have read the study protocol and gave proposals for improvements.

Ethics

In accordance with the Declaration of Helsinki and the Ethical Guidelines for Nursing Research [30, 31], oral and written consent was obtained from all the participants. The study did not need ethical approval from the National Committee on Health Research Ethics (REF: S-20192000-111).

Ethics committee and IRB name: Committee on Health Research Ethics in the Region of Southern Denmark committee no. 1 ref. Prof. Kirsten Kyvik. Reason for exemption: This study is an interview study without any intervention.

The study was registered with the Record of Data Process of Registry of Southern Denmark (19/22672). Data were stored in SharePoint (Microsoft Corporation) and OPEN_938.

Analysis

Data analysis was inspired by systematic text condensation [32]. The analysis was performed by the first author, who coded the data. The systematic condensation and interpretation of data supported by quotes from the focus groups was discussed continuously with the whole author group to secure agreement. The process was conducted in four steps: (1) total impression: identifying themes, (2) identifying and sorting meaning units: themes to codes, (3) condensation: code to meaning, and (4) synthesis: condensation to descriptions and concepts of final categories [33]. Finally, patterns across data were identified and agreed on.

Results

Participant descriptions

Three focus groups were conducted, comprising 16 HCPs, of which four were physicians (Table 1). Overall, 20 HCPs were approached. However, two physicians could not attend due to busy schedules and two nurses were off work sick on the day of the focus group.

Table 1: Participants' sociodemographic data

Sociodemographics	Statistics
Gender and age n	
Female	**15**
Male	**1**
Age (years)^a, mean	**38**
Qualifications	
Registered nurse	**14**
Physician	**2**

Professional experience (years)[b]	
<5 years	**7**
>5 years	**11**
Experience in the ED (years), mean	**3.5**

[a] Range: 25–59 years

[b] Range: 2–25 years

Three main themes were derived from patterns across the focus group discussions and supportive notes.

Creating a trustful relationship

This theme derived from consistent expressions of patients having a need to gain trust in HCPs from the very beginning of their stay in the ED. Trust was discussed as fundamental in helping patients to find reassurance in the acute and unpredictable situation they found themselves in. HCPs argued that a trustful relationship often began through fast assessment. Fast assessment by the HCPs aimed to provide a preliminary evaluation of the patients' current condition and to plan the initial treatment and observational regime, but also reflected HCPs credibility. Moreover, HCPs noted that it was of great importance to eliminate patients spending time in uncertainty, as it could promote feelings of distrust. A way of supporting a patient's feeling of certainty was fast assessment from a person-centered care perspective.

'It is my impression, if patients feel they are trapped in uncertainty, e.g. if they are not assessed immediately upon their arrival, it might affect our ability to create a trustful and caring encounter' (Nurse, focus group 1).

All groups stated that it was essential for all patient pathways to have a trustful beginning, otherwise it could be difficult to gain confidence due to the short period of time in the ED. It was argued that if patients first had experienced the situation as distrustful, it was difficult to rectify the situation. However, participants discussed that fast assessment did not always seem to be an option, due to the hectic and ever-changing nature of the ED. In several incidents, HCPs felt powerlessness as the hectic environment affected how they could manage to provide person-centered care as part of a trustful relationship. HCPs discussed that patients had a need for person-centered care, but the fragmented encounters with HCPs and interruptions during conversations made this challenging.

'Undisturbed time is really important if we want to succeed in providing person-centered care. During most of my shifts I get interrupted, e.g. by three phone calls, during patient conversations. The patients might think that I do not have a genuine interest in listening to their stories' (Nurse, focus group 2).

The patients' need for continuous information was highlighted by the HCPs. Most importantly, information should be consistent and accurate, as this provided trust and reassurance. In order for patients to be able to cognitively understand and perceive the information correctly, reassurance was mentioned as a key element. Several HCPs stated they felt patients' anxiety could be reduced by asking them questions concerning their thoughts or worries of becoming acutely ill, if time and skills were available. Additionally, HCPs agreed patients needed opportunities to talk about their fears, and to be reassured if these fears were unfounded.

'The patients are unaware of the severity of their illness. You therefore have to be explicit and clear about your thoughts, as this creates trust and eases their anxiety' (Nurse, focus group 3).

HCPs argued that working in the ED demanded a technical approach to treatment and care more than a psychological and social approach. The technical approach might be dominant as the ED setting required HCPs to be able to act fast and work systematically in care and treatment, due to critically ill patients and a high and continuous flow of new arriving patients. The disadvantage of this was a risk of being superficial and lacking a holistic and patient-centered approach, and not showing a genuine in-depth interest in the patient, thus causing anxiety.

'HCPs with many years of experience in the ED might overlook social or mental health care needs, as they are used to focusing on a high patient flow and more physical aspects in the provided care' (Nurse, focus group 3).

Questions were raised concerning whether patients actually were ready to talk about worries or fears during the short period in the ED. All groups noted that most patients had a need to talk about their experience of acute illness, but this was difficult to accommodate in the ED, due to lack of focus or time. In support of this need the implication of family involvement was discussed.

'When patients are discharged, they need to talk to someone to get past the mental experience of being acutely ill. HCPs in the ED cannot manage those phases in such a short period. Here, family plays an important role' (Nurse, focus group 3).

Responding to family members: a bother or a benefit

HCPs agreed that family members play an important role both during the patients' ED stay and after discharge. Furthermore, it was argued that family members often have a lot of information about the patient and are usually not in the same mental level of distress as the patients. They often help physicians to clarify symptoms and find an accurate diagnosis. Involving family members was not only important because of the short stay in the ED, but also because involvement would enhance their confidence and adherence to the treatment and plan after discharge.

'Family members play a pivotal role, because often it is conversations with them that help us diagnose the patients accurately or even avoid unnecessary examinations' (Physician, focus group 3).

Due to many encounters and lots of information in the ED, HCPs indicated that family members and patients may have difficulty remembering information given orally. The use of written material concerning the treatment plan was therefore suggested as part of the discharge conversation, even though it might be time consuming. HCPs saw this would support the inclusion of family members not present in the ED, as they would be able to read the discharge information and instructions as well.

'When patients are readmitted, I realize how little they were able to remember from the discharge instructions. It would be relevant to have the information in writing instead. This could be a way to empower the family as one unit' (Nurse, focus group 2).

HCPs noted that not involving family members could increase the risk of readmission. It was discussed that family members often play a central role after discharge, and there therefore was a need to empower them to handle the care and treatment plan. This empowerment was seen as essential, because otherwise family members might not feel confident in helping the patient to manage possible recurring symptoms appropriately, and perhaps instead eventually urge them to call an ambulance.

'We need to acknowledge the benefit of involving the family. Involving the family might prevent readmissions. We need to create a space for all voices to be heard. We need to take care of potential risks of readmission, such as lack of pain control' (Nurse focus group 1).

HCPs also discussed that family members might see the ED as a "quick fix' in resolving symptoms, such as rehydration instead of taking a more holistic approach to investigating the cause of the dehydration. HCPs perceived that family members' expectations could sometimes go beyond what the ED staff was able to deliver, due to the demands of efficiency and flow. This was a demand which they found hard to accommodate.

'Some family members think we can take care of all the issues related to the patient. This would be nice, however, it is not realistic when working in an ED' (Physician, focus group 3).

Even though HCPs found involvement of the patient and their family members to be beneficial, it was discussed as problematic, especially in busy periods. In such instances, HCPs discussed a need to just prioritize the patients and commence the treatment, to prevent overcrowding in the ED. Due to the short period of time patients spend in the ED, many family members were not able to attend the department before discharge. Disagreements arose in the groups on whether involving family members needed to be prioritized or not.

'I do not prioritize calling the family if the department is busy. This must be done by the patient… even though, I am aware it can be difficult for the patient to know the answers to all the questions raised by the family, which might affect whether the family member feels confident or not' (Nurse, focus group 2).

HCPs noted that patients who spent only short stays in the ED were often labelled as having "uncomplicated' conditions. They were therefore at risk of getting insufficient attention concerning their need for discharge information. Insufficient discharge information made it challenging for the family to support the patient and affected both the patient and the family negatively.

'Our core task is to maintain a high patient flow. In my experience, the uncomplicated patients with low triage level and being able to self-care often suffer from that fact' (Physician, focus group 3).

HCPs also suggested a discharge coordinator (technical or personal) in the ED to prevent fractional discharge information being provided, for all patients, whether they had complex care issues or uncomplicated needs. This was a way to support both patients and family members even when working fast paced.

Working as an interdisciplinary team

In all groups, HCPs found it challenging to assemble all the information and knowledge regarding the care, treatment, and family. Subsequently, patient discharge conversations would often become fragmented and confusing for the patients and their families.

They also found it difficult to identify possible obstacles to the patients adhering to the discharge plan, or to detect how the patients would cope with their health situation in general. Interdisciplinary teamwork was presumed to have a positive effect on how HCPs managed to accommodate patient and family members' needs towards discharge.

'Currently, we cannot ensure that everything is covered. We do what is expected from our point of view and send them home. I believe this may cause insecurity and distrust of the healthcare system' (Nurse, focus group 3).

In the EDs, there was no tradition for interdisciplinary teamwork, apart from the trauma rooms. Specific needs in order to benefit from this collaborative approach were seen as the level of information and communication, the involvement of social networks, and collaboration with community nurses, to ensure a discharge plan that accommodates patients' mental and psychical abilities so they can manage as intended.

'We have talked about reorganizing the workflow many times, but we found no solutions optimal. However, we have discussed all the benefits regarding improved collaboration' (Nurse, focus group 3).

Suggestions regarding a joint discharge conversation protected from disruptions, involving nurses, physicians, and family members, were initiated. A discharge conversation was viewed as a possible way to make a precise update on the plan, thus promoting collaboration with the community or family members not physically present in the ED, but HCPs also discussed obstacles in having to wait for each other, to enter a discharge conversation as a team.

'I think it affects the flow in the patient's course of treatment if we do not collaborate in some way. And in the absence of inter-professional interactions, patients will not be able to understand the treatment plan' (Nurse, focus group 1).

An closer interdisciplinary collaboration was also discussed to prevent patients from having to repeat the same information several times to other HCPs, which was perceived as resource-intensive—resources that patients in many cases did not have. HCPs are aware that patients discharged after a few hours in the ED have potentially both given and received lots of information that could be difficult to understand in their stressful state of mind.

'By the time of discharge, patients should have information in writing because they may not be able to remember after returning to their homes, considering their stressed state of mind. Currently, this is not implemented but may be relevant in the future' (Nurse, focus group 3).

HCPs also suggested that this close, interdisciplinary teamwork approach could be a form in which information was given as a whole and not in fractional form. This would support a better understanding for the patients. Health technical solutions were suggested as the facilitator. The technical solution should convey continuous information for patients and their family members during their stay in the ED. Likewise, the solution should enable the patient and family members to revisit the information at home, and allow HCPs to get a view of the patients' course of treatment in the ED.

'If we had a system that facilitated the progress of ED activities and was available for the patients as well, the HCPs would be able to get a fast brush up on the next steps and patients could have their voices heard. It would increase the quality of the health-related discharge information we provide' (Nurse, focus group 1).

Discussion

Stronger interdisciplinary collaboration might improve patient pathways in the Emergency department

Our findings highlighted that the ED organizational structure often provided short and fragmented encounters between HCPs, patients and family members. This appears to be out of step with what HCPs highlight to be important from a person- and family-centered perspective.

In line with this, a Swedish qualitative study investigated staff strategies in ED care situations and recommended that HCPs be given tools to handle hectic and stressful situations, to enable quality in care. However, no tools were tested in the study [14]. Clear communication was highlighted in our study in order to develop a trustful relationship with patients in the initial ED assessment. Different models of communication strategies have been tested in support of creating improved discharge information [34, 35]. As was the Calgary Cambridge model, which showed high reliability in striving to have a person-centered communicative approach [36]. The HCPs in our study argued that they were trained in a task-focused culture and a technical life-saving approach more than a person-centered approach. A recent qualitative study investigating staff strategies for dealing with acute care situations supported these findings [14]. They found that HCPs had two strategies: a proactive strategy focusing on flow and a reactive strategy with the values of delivering person-centered communication [14]. In a prospective cohort study conducted by Body et al. [37], they found that ED staff were required to not only focus on physical symptoms and medications but also on easing suffering [37]. This includes managing emotional distress, developing therapeutic partnerships, and tailored information in preparation for discharge [37]. Our findings highlighted a necessity for HCPs to balance working in an organizational structure which demanded high patient flow along with their awareness of the needs of patients and family members for trustful encounters and thorough information. To enable this, HCPs recommended improved interdisciplinary teamwork.

An organizational culture of interdisciplinary teamwork has been shown to enable mentoring and development of HCPs to achieve accurate and timely assessment and the delivery of person- and family-centered care [14]. Interdisciplinary teamwork was found to prevent misunderstandings and inconsistencies in the given information [14]. These findings are echoed by Knorring et al., who found that 36% of ED patients experienced inconsistency of information [38]. Inconsistency was found to be a result of lack of teamwork, and future research focusing on the impact of different types of teamwork was suggested [38].

HCPs in our study propose the development of an unspecified technical solution delivering information - both in-hospital and after discharge information. The solution was suggested as an integrated tool in the interdisciplinary teamwork, to empower the patients with continuous information and clarity of their course of treatment, despite busy periods in the ED. An application-based service used in the ED to enable tailored patient information, which is timely, and the development of treatment goals has been shown to improve patient experiences and outcomes [39]. In this novel pilot study by Kim et al., it was found that their service of personal mobile health records provided with patient centered medical information improved self-management of patients' health conditions [39]. Previous research on promoting person- and family-centered outcomes, has highlighted that patients' personal characteristics and preferences for information, and their specific disease were influencing factors, but the impact of the environment is often overlooked when seeking solutions [40, 41]. The involvement of future end-users in developing a technological solution to cover identified needs helps towards creating solutions to improve clinical practice [20, 42]. However, barriers in the existing culture and its readiness to change must be identified to avoid resistance to change [43].

Can family involvement and ED care be matched?

In our study, HCPs positively associated family involvement with improved care in the ED. Family support and understanding of the treatment and discharge plans were found to influence revisits to the ED. Other research has shown that ED nurses found working with families to be either a bother or beneficial, depending on whether family members have an understanding of the healthcare system [15].

Furthermore, in our study HCPs discussed whether they were obligated to involve family members. The latter was often seen as time-consuming, because family members could have unrealistic expectations of what could be achieved in a busy ED. The culture and attitudes among ED staff influence how HCPs engage with families, and HCP training in communication skills is required to improve their relationship with families [44]. Based on our findings, future studies focusing on designing person- and family-centered strategies and how they can improve ED care are warranted. Our study suggests that it might be beneficial using technical solutions to integrate tailored information and therapeutic communication in order to reduce the existing gap between person-related needs and organizational needs of productivity and high patient flow.

Limitations

This was a national study, limited by the fact that the Danish healthcare system is organized differently than other countries. Data were collected using qualitative methods, whereas a broader perspective could be obtained by surveys. Due to busy schedules, only two physicians participated in the focus groups. Collecting data from the groups was difficult because they either too homogenous, suffering from an absence of interaction, or too heterogeneous with the risk of larger disagreements [26]. Staff managers at the ward therefore participated in constructing the groups.

Conclusion

There is a gap between ED HCPs' perception of the needs of patients and family members, and what is currently delivered during short stays in the ED. The findings suggest that interdisciplinary teamwork could be the key to ensuring tailored patient- and family-centered information and goals developed within the ED. In the future, using technology to enable the delivery of tailored information to support person- and family-centered informative approaches in and after ED treatment should be considered. Technology enables the patient and family members to revisit the information at home, and the HCPs to view the patients' course of treatment.

Table legend:

Table 1: Participants' sociodemographic data

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Patient consent: No patients were involved in this study, but consent was obtained from all healthcare professionals.

Data sharing: Data can be shared on reasonable request.

Supplementary file: The study protocol can be accessed:

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Open access Protocol

BMJ Open

How to improve emergency care to adults discharged within 24 hours? Acute Care planning in Emergency departments (The ACE study): a protocol of a participatory design study

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ABSTRACT

Introduction The development of acute symptoms or changes in diseases led to feelings of fear and vulnerability and the need for health professional support. Therefore, the care provided in the acute medical and surgical areas of the emergency department (ED) is highly important as it influences the confidence of patients and families in managing everyday life after discharge. There is an increase in short-episode (<24 hours) hospital admissions, related to demographic changes and a focus on outpatient care. Clear discharge information and inclusion in treatment decisions increase the patient's and family's ability to understand and manage health needs after discharge, reduces the risk of readmission. This study aims to identify the needs for ED care and develop a solution to improve outcomes of patients discharged within 24 hours of admission.

Methods and analysis The study comprises the three phases of a participatory design (PD). Phase 1 aims to understand and identify patient and family needs when discharged within 24 hours of admission. A qualitative observational study will be conducted in two different EDs, followed by 20 joint interviews with patients and their families. Four focus group interviews with healthcare professionals will provide understanding of the short pathways. Findings from phase 1 will inform phase 2, which aims to develop a solution to improve patient outcomes. Three workshops gathering relevant stakeholders are arranged in the design plus development of a solution with specific outcomes. The solution will be implemented and tested in phase 3. Here we report the study protocol of phase 1 and 2.

Ethics and dissemination The study is registered with the Danish Data Protection Agency (19/22672). Approval of the project has been granted by the Regional Committees on Health Research Ethics for Southern Denmark (S-20192000–111). Findings will be published in suitable international journals and disseminated through conferences.

INTRODUCTION

When patients have an acute episode of symptoms or instability of a chronic disease, they often have feelings of fear and helplessness due to the uncertainty of the situation. This brings patients and their families to the emergency department (ED) in a vulnerable and distressed situation.[1] The care provided at the ED will influence the patient's and family members' experience of the current stay and influence their ability to understand and use health information for maintaining their health after discharge.[1–3] Family members rank supportive communication with nurses as vital to reduce stress and anxiety.[4] Emergency nursing care is administered by systematic guidelines based on, for example, Airway, Breathing, Circulation, Disability, Exposure (ABCDE) principles to support effective patient pathways and to identify specific patient needs, making it possible for nurses to respond rapidly and effectively.[5] The majority

Strength and limitations of the study

- The proposed study will, through participatory design (PD), combine methods into the design and test of an innovative solution, seeking to improve patient and family outcomes in connection to their discharge from the emergency department (ED). This will provide insight into patient and family needs during their ED pathway.
- It is a key feature in the study to ensure user involvement from all stakeholders and sustainability of the developed solution, as it is drawn directly from patients', family members' and healthcare professionals' statements, experiences and ideas.
- The study includes family perspectives, which is limited in previous research from an ED perspective.
- Using PD could be time-consuming and might be a limitation, as it could be difficult to gather relevant stakeholders at the same time.

of patients with acute symptoms are initially cared for in a general ED or common acute medical and surgical emergency unit.[6] Many countries have this organisational structure and systematic approach to ensure fast, systematic and comprehensive assessment along with the improvement of patient flow.[7 8] The organisational structure has a positive effect on preventing overcrowding and is also a result of the reduced number of in-hospital beds.[9] Attention is often on organisational concerns, but there is a need for exploring patient-related aspects as well.

Acute nursing care is characterised by rapid and efficient treatments. This often results in short and fragmented encounters between patients and nurses.[2 10] Previous research on patient perspectives has shown that patients feel that ED nurses seem to lose interest in the patient's life situation after the most acute treatment has been initiated.[11] In line with this, a Danish National Survey revealed that 33% of patients did not experience that their family's perspective was considered important.[12] Furthermore, 30% of the patients participating in this survey reported that they were not involved in the decision-making process of their care.[12] These findings indicate that the international and national health standards for patient involvement are not met.[13 14] Healthcare professionals' acknowledgement of the family's role and inclusion in care decisions enable the family to improve the patient outcomes, but also ensure that family caregivers understand information and are able to coordinate care and manage practicalities.[15] A way to improve the quality of care would be to give patients and families a stronger voice. This could help identify their needs and the resources they use, to enable supportive care to be tailored.[16] To enable nurses to assess and partner with patients and families to meet their needs and tailor care during short nurse–patient interactions, a nurse-led intervention may be useful.[17] Previous research exploring ED patients' expected outcomes identified four main concerns: understanding diagnosis, symptom relief, reassurance and treatment plans.[6 18] However, the family perspective was not reported in these studies. ED nurses highlight family members as an important resource to obtain information, and needs more research.[19] Furthermore, research has identified numerous discharge interventions and strategies to prevent readmissions; however, these are primarily concerning elderly, frail patients and not inclusive of family members.[20–23] Sparse research has been conducted focussing on the diversity of ED patients and their families, highlighting the need for interventions on how to assess and tailor care.[24–26]

Objective

The overall aim of this study is to improve patient outcomes by nurse assessment and tailoring care for patients and family members discharged from the ED <24 hours.

Following research objectives will guide each phase:

1. To create knowledge about what patients, family members, and healthcare professionals do and what they say they do, in connection to patients discharged within 24 hours (phase 1a).
2. To assess the needs and preferences of patients and families admitted in the ED to gain an understanding of patients and family needs (phase 1b).
3. To understand how healthcare professionals in the ED perceive patients and family needs and preferences, and how they would accommodate these in their care (phase 1c).
4. To design and develop a solution to improve patient outcomes using focus group workshops (phase 2).

Methods

The overall research design and methodology for this study is participatory design (PD).[27] The Family System Theory[28] and the framework of Medical Research Council[29] for developing interventions in healthcare are used to guide the study.

Study design

PD is chosen as research methodology as it includes the participants in the design phase and is relevant to use in research areas with limited knowledge.[27] PD is defined by making innovative solutions to problems in real life through a democratic stance and genuine participation of all relevant participants which represent future end-users of the field.[30] It enables the focus to be on future end-users in designing an intervention strategy that provides possibilities to improve patient outcomes in the ED. A PD process conducted in health science is typically performed in three interdependent phases[31] and is characterised by collective 'reflection-in-action' iterations. In phase 1, the focus is to identify user needs. In phase 2, a prototype as a solution to cover the identified needs is developed. Finally, the solution is implemented and tested in a clinical setting and its effect and success will be evaluated. Here we report on the study protocol for phase 1 and 2. As the three phases are interdependent, phase 1 will provide the information and inform phase 2 and so on. Therefore, phase 2 cannot be predesigned, wherefore an exploratory approach will be used as design.[27 32] With an explorative approach, patient outcomes are not defined in advance but will be identified by the patients and family members in the initial phase of the study. However, the main outcome must be focussed on the quality of care expressed by patients. A literature review exploring ED patients' outcomes and clinical interventions will be completed for each phase to ensure an understanding of current research to inform the study.[33]

To identify patient and family needs and preferences, field observational studies inspired by Spradley[34] will be obtained by the first author, followed by joint semi-structured interviews of patients and family members.[35] Focus groups of healthcare professionals will enable sustainable and an achievable solution to develop. An intervention plan developed from phase 1 will be constructed and relevant stakeholders and future end-users of the solution will be invited to participate in three workshops

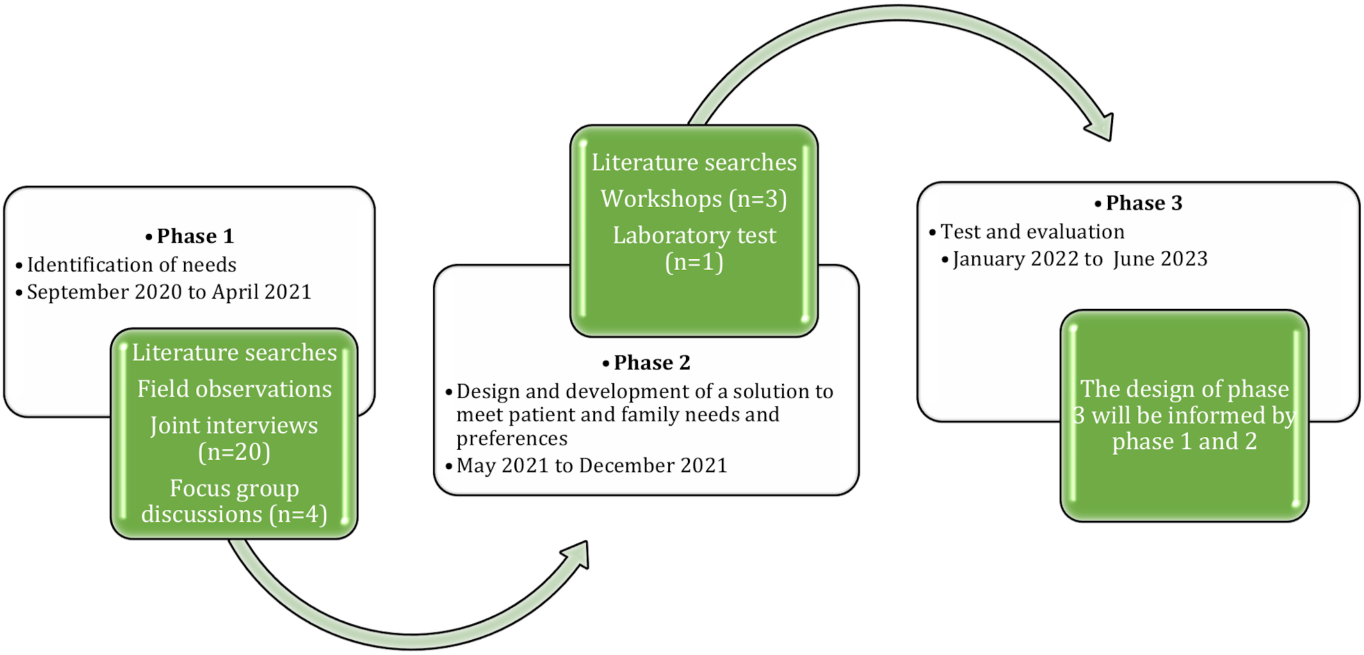


Figure 1 The estimated time frame and methods of the Danish study 'Acute Care planning in Emergency departments, (The ACE study)'.

to finalise the design. The workshops will be designed to focus on: (1) generation of ideas (2) workshop with the intention to create mock-ups for the creation of a final prototype and (3) a 'laboratory' workshop where this prototype is pretested in a clinical setting.[27] A 'laboratory' workshop is characterised as deliberately staged activities during which a controlled environment for exploration is created, and open collaboration between the participants is facilitated.[27]

The Medical Research Council[29] framework of developing complex interventions will be used to guide this study: (1) development (2) feasibility and (3) evaluation in line with the three phases of the study's research design, as illustrated in figure 1. The Medical Research Council argues that an intervention is complex when it contains several interacting components.[29] The current study will include a range of patients, families, healthcare professionals and organisational changes.

Theoretical framework

The theoretical framework is based on the Family Systems Theory[28] that care is provided holistically with patient and family as the unit of care. According to Wright and Leahey, family members could be spouses, partners, adult children, friends or others from the care-recipient's social network who care for the patient. Family Systems Theory aims to help families to achieve stability in their lives by focusing on their internal relationships, resources and capacity to adapt to new situations caused by illness.[28] This framework guides the research process including sampling, designing intervention and research aims. After episodes of care in emergency, the family is the main carer and provider of support. Therefore, to improve patient outcomes, the family's inclusion is required to enable family information needs to be met.[11]

Setting

The study is carried out from September 2020 to June 2023, as shown in figure 1. Data will be collected from the ED at two hospital sites: (1) The Odense University Hospital (OUH), which is a 1000 bed university hospital, and covers all specialities and provides care for a population of 230 000 adults living in four municipalities. The ED seeing 69 000 annual attendees, mean age 45, treats 180 patients per day with a capacity of 42 beds and 30 examination rooms. On average, 32 patients are admitted to the hospital per day, and 50% are discharged within 24 hours.

(2) Department of Emergency Medicine, Hospital of Lillebaelt, Kolding. The Hospital of Kolding has the capacity of 320 beds. The ED seeing 50 000 annual attendees, mean age 45, receives 146 patients per day and has 58 beds and 5 trauma rooms beds capacity. The EDs are organised as they can control the allocation of the in-hospital beds at the rest of the hospital.

The Danish healthcare system is provided with open access and people do not need health insurance to be seen by a physician as it is a tax-funded welfare system.

Table 1 Patient features in phase 1 of the Danish study 'Acute Care planning in Emergency departments (The ACE study)'

Patients (n=20)	Specific attributes
Age	≥65 years of age/≤65 years of age
Sex	Equal male and female
Symptoms	Equal surgical/medical symptoms
Education level	Below/above secondary school
Function level	Receiving primary care/not receiving primary care
Social status	Living independently/living with someone

Acute patients are evaluated in person or by emergency calls by primary care physicians who act as gatekeepers before entering the ED. Denmark has a well-established and free of charge primary care, public pre-hospital emergency transport and treatment at public hospitals. When patients are discharged, they can get uncharged follow-up by their general practitioner, primary nursing care or in an outpatient clinic.

The study is affiliated with the Family Focused Healthcare Research Center (FaCe) at the University of Southern Denmark.[36]

Participants

Patients and family members

Inclusion criteria

Purposive sampling of patients: ≥18 years of age, Danish-speaking, discharged <24 hours with medical or surgical symptoms. Family members, invited by the patient, are included.

The target study population is shown in table 1.

Sampling strategy will ensure equally represented patients with first time visits among patients with multiple ED visits. Other collected variables: gender, age, civil status, educational level, length and frequency of stay, diagnosis, Charlsons comorbidity score and family relations.

Exclusion criteria

Cognitive impairment assessed by the nurses by using Glasgow coma scale added by individual clinical judgement according to be able to understand the terms of participating in a research study. Highest and lowest triage level according to Danish Emergence Process Triage.[37]

Healthcare professionals

Nurses, physicians and physiotherapist working at the ED>6 months will be included. Inclusion will be done purposively to enable a broad sample of healthcare professionals.

Other collected variables: gender, age, profession, years since graduation years of employment at the ED and educational level.

Collaborators and consultants

The participants in this category will be identified during the analysis of phase 1. It seems relevant to look into previous research, consulting experienced researchers within PD and looking into exciting interventions in healthcare, IT software engineers, design schools, communication advisors, sociologists, anthropologists and cross-sectoral partners.

Phase 1a: field observations

Research objective

To create knowledge about what patients, family members, and healthcare professionals do and what they say they do, in connection to patients discharged within 24 hours.

Method

Field observations will be conducted in both EDs (estimated n=10 days of 4 hours a day) to include relevant perspectives in the understanding of patient and family needs and preferences. We chose four to 6 hours as time frame for the field observations based on National standards stating that patients in the Danish EDs should receive a treatment plan within 4 hours.[38] All sample sizes in the study are based on scientific guidance of qualitative research.[39] Field observational studies are chosen as it has the strength to create direct knowledge about what participants do and what they say they do,[40] in connection to their treatment and care in the ED. Field observations are planned at different weekdays and times of the day to show the potential diversity. The duality of being a researcher, experienced nurse and employed at the department at the same time will be accessed as objectively as possible by using a template for documentation of field notes, inspired by Spradley.[34] Each day, field notes will be taken and transcribed immediately to secure correct recall.[34] The notes are expected to consist of descriptions, illustrations and short quotations. Approval from the management of the departments was obtained in February 2020. Data from field observations will actively be used to understand what the patients have experienced and inform the development of the interview guide.

The interviewer is an experienced emergency nurse with a Master's degree (12 years of emergency nursing). From previous research, she has experience doing intervention and qualitative research.[41 42] She is supervised by an experienced research team that is involved in every aspect of the project.

Phase 1b: interviews with patients and family members

Research objective

To assess the needs and preferences of patients and families admitted in the ED to gain an understanding of patients and family needs.

Method

Guided by a phenomenological hermeneutical framework, patients and family members from both EDs will be interviewed face-to-face or by telephone within the first week after their emergency visit (n=20). Recruitment of patients and family members will occur during the observational study. Patients will be approached and provided with a plain language information sheet of the study and asked if they would be interested. Once patients are recruited, family members will be invited into the study. Using a purposive sampling technique will ensure balance across the different patient features from table 1.

Semi-structured family interviews will be conducted in person. The interview guide will begin by asking participants to share about their visit to emergency. The researcher will ask participants to elaborate on different aspects of their emergency visit from the observation data collected. Interviews will be conducted at a time and place convenient for the patient and family member. Interviewing patients and family members is aimed at identifying both their individual and common experienced needs and preferences. Interviews enable the participant's perspectives and experiences to be shared to gain an understanding of the experience.[43] A question example is: 'What have you talked about since discharge?' We will continue recruitment until thematic saturation is reached; the point at which no new themes are emerging.[39] This will include a minimum of 20 participants to secure maximal variation of the target group but will be continued if the thematic saturation is not reached within this sample size. We chose this sampling strategy as it is designed to ensure that a full range of themes is elicited within each group.

Phase 1c: focus group interviews with healthcare professionals

Research objective

To understand how healthcare professionals in the ED perceive patients and family needs and preferences, and how they would accommodate these in their care.

Method

Four focus groups will be conducted with approximately n=20 nurses and physicians equally from both sites. Focus groups are an effective way to produce group-level data, based on the interpretation, interaction and norms of social groups.[44] Participants are asked to discuss quotes from patients' and family members' interviews to understand healthcare professionals' perspectives and reactions to these quotes. The interactions between participants can lead to participants contributing spontaneous statements about the given subject, and new ideas are created. The first author moderates the focus group together with one of the more experienced researchers from the research team. Observations of the non-verbal communication, the group-interaction and elaborating questions will be recorded as field notes.[44] Each focus group will consist of four to six participants.[45]

Analysis: phase 1a–c

Qualitative data from the joint interviews, focus group interviews and field observational studies will be synthesised and analysed in a phenomenological and hermeneutical framework. The hermeneutic approach allows us to gain an insight into the individual's lived experience and provides an interpretive perspective to explicate meanings and assumptions in the data by studying and interpreting narrative.[39]

To organise the process of the analysis, the steps from Malterud's[46] systematic text condensation (STC) will be used in NVivo12. First, we will capture a general impression of the data and extract preliminary themes. Second, the data will be allocated into meaningful units which is a text section that represents pieces of information about a research question. The meaningful units will be condensed and coded, and finally, findings will be synthesised. To ensure the trustworthiness and rigour of the analysis process, we will follow the standards for reporting qualitative research of O'Brien *et al*.[47]

The progressive process line in phase 1 is shown in figure 2.

Phase 2: design and development of a solution in a workshop process

The second phase is the actual development of a solution to improve patient outcomes by nurse assessment and improved tailored care to patients and family members, discharged from the ED <24 hours.

Research objective

To design and develop a solution to improve patient outcomes using focus group workshops (phase 2).

Method

A co-design framework will be used. The process of design and development of a solution will be affected by involving participants across all areas in workshops and

Acute Care planning in Emergency departments (The ACE study): protocol of a participatory design study.

Figure 2 Progressive process of phase 1.

in the laboratory workshops. This will enable discussion of needs, mutual learning and creativity, ensuring that the solution is innovative and user-focussed.[27] Initially, an idea-generating workshop will be conducted, followed by a mock-up workshop, creating a temporary prototype of the solution. Workshops will consist of different participants representing different perspectives: patients, family members, various healthcare professionals, IT designers, innovation consultants, the research team among others. Collecting a broad variety of participants with different backgrounds, and perspectives will bring nuanced perspectives to the process and the ability to predict possible challenges with the prototype.[27 29] The workshops will be facilitated as a space for creativity and 'reflection-in-action' among participants. To facilitate this creative space, visualisation tools will be used, such as posters, personas and note paper or post-it notes.[30] The use of creative space allows participants and researchers to work as equal partners, bringing the iterative process into action. The results of the analysis will be presented for the invited participants by the research group to create direction. After the initial workshop, the research team will include the relevant stakeholders to proceed with the development of the solution. A possible solution will be informed by study 1 and the workshop process. Looking into previous research, intervention examples could be telehealth solutions, discharge follow-up or cross-sectoral collaboration.[48]

Finally, a 'laboratory' workshop pretesting the prototype sees its feasibility and acceptability in practice.[30] This workshop will include a smaller number of participants as the aim is narrow, compared with the creative, innovative workshops.

The number of workshops and its attendees will depend on the process, but based on previous research using PD,[30 48] at least three workshops are estimated.

Analysis

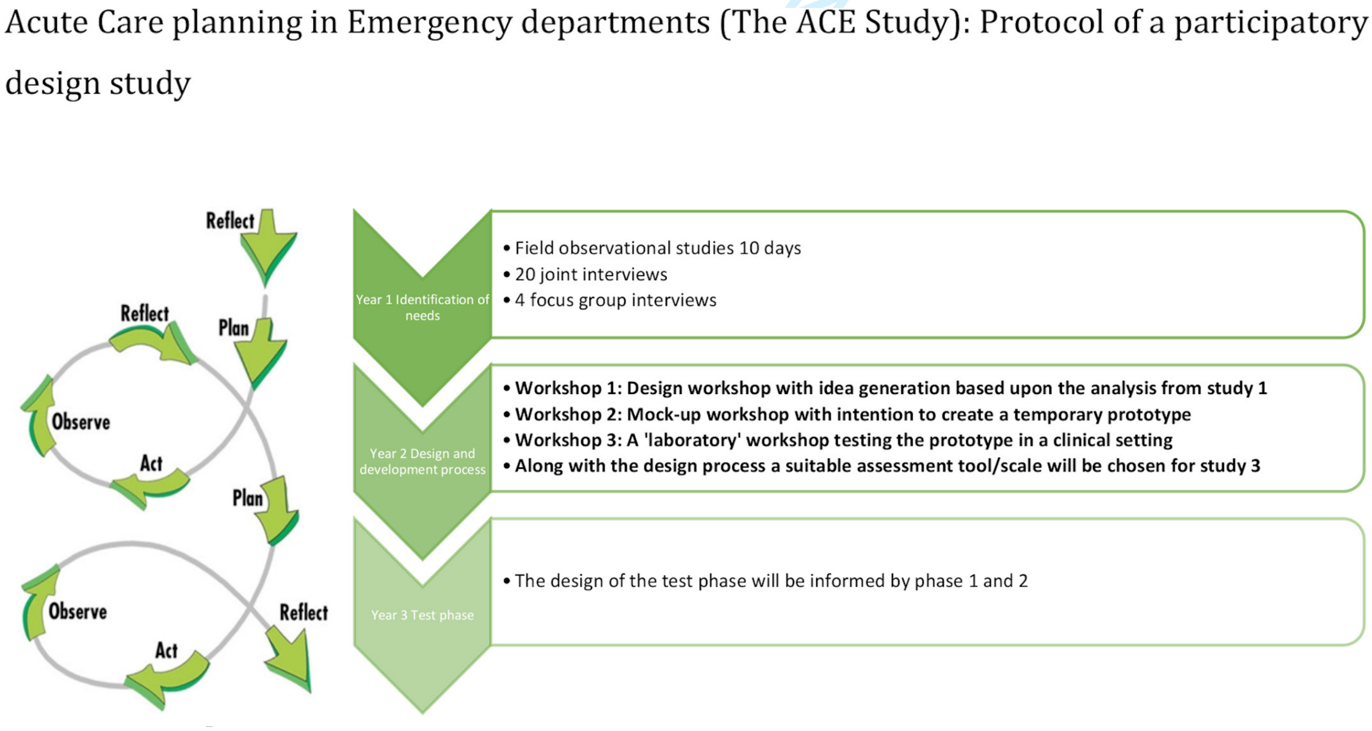
Data from the workshops will be obtained as pictures, notes on posters, debriefing and recorded discussion during the workshops. The first author will transcribe and systematise the data into themes inspired by STC[46] and present them as a report. The report will be discussed by the research team and relevant collaborators for final adjustments before the test phase. The analysis and development of the model will be conducted iteratively in the following steps: plan, act, observe and reflect. This process is illustrated in figure 3.

The phase three evaluation will be developed from the most important patient reported outcomes identified in phase one and targeting the intervention in phase 2. The evaluation phase three will be published in a separate study protocol.

Data management plan, ethics and dissemination

Oral and informed consent will be obtained after providing plain language information.[49] Participation is voluntary, and it is possible, at any time, to withdraw from the study. The study is registered with the Danish Data Protection Agency (19/22672). Approval of the project is obtained from the Regional Committees on Health Research Ethics for Southern Denmark (S-20192000–111).

Data will be stored at Open Patient data Explorative Network (OPEN_938).[50] Findings will be published in suitable journals and disseminated through workshop and conferences.



Acute Care planning in Emergency departments (The ACE Study): Protocol of a participatory design study

- Field observational studies 10 days
- 20 joint interviews
- 4 focus group interviews

- **Workshop 1: Design workshop with idea generation based upon the analysis from study 1**
- **Workshop 2: Mock-up workshop with intention to create a temporary prototype**
- **Workshop 3: A 'laboratory' workshop testing the prototype in a clinical setting**
- **Along with the design process a suitable assessment tool/scale will be chosen for study 3**

- The design of the test phase will be informed by phase 1 and 2

Figure 3 Iterations of phase 2: plan, act, observe and reflect.

Patient and public involvement

The local Patient Council at OUH was consulted in the early design phase of the study, and their perspectives were taken into account. The core element of the study is built around user involvement and its strengths and limitations will be elaborated on in the discussion section.

DISCUSSION

The use of a PD provides an innovative approach through the inclusion of users across the healthcare setting. PD and its methods are very productive research approaches, directing the design of the solution to support patients' needs and organisational changes in clinical practice.[31 51] The participatory approach ensures stakeholder involvement and sustainability of the designed solution as it is drawn directly from patients, family members and healthcare professionals. The data will provide a strong foundation to improve patient-valued outcomes and experiences of support. Co-production and focus on future end-users are increasingly applied in designing and improving healthcare, and have shown great potential to improve the quality and value of care.[30 48 52] In our study, we base the design and development on a qualitative foundation from the two main groups of end-users; patients'/family members' and healthcare professionals' descriptions of needs and preferences. By actively involving participants, the solution will be targeted at the main issues[8] in acute care and the likelihood of actually improving family-inclusive patient outcomes will increase. We consider participant interaction to be one of our study's main strengths, enabling a deeper understanding of emergency care. Collecting data at two different sites is considered a strength, as it will ensure the national generalisability of the findings.

As our protocol is based on co-production, it may be at risk of logistical and practical challenges by gathering different stakeholders. Challenges posed by engaging healthcare professionals in workshops relate to staff resources, and this must be addressed.[53] Phase 1 challenges will be to sample enough participants to be representative as the ED has a great diversity of patients with different ages, needs and diseases. Therefore, purposive sampling is chosen. Field observations may lead to irrelevant focus[34] and risk of the Hawthorne effect;[54] however, using an observation guide inspired by Spradley will ensure a systematic approach.[34] Although it is expected that both parties (patient and family members) will actively participate in joint interviews, the advantages and disadvantages must be addressed. The main disadvantage is the risk that one of the participants may be more conversational and may overrule the other one. However, joint interviews are chosen as the authors want to explore both perspectives and create a social interaction that could bring out their experiences in a nuanced way.[44] Involving participants actively in workshops and working in iterative processes will place demands regarding flexibility and willingness to change direction, if participants say so. This may be time-consuming and cost-intensive.

Summary

By focussing on co-production, this study is expected to contribute to an improved health outcome of acute illness and an improved understanding of how to support patients and family members to reach the ability to manage their situation after a short ED episode.

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Correction notice This article has been corrected since it first published. The provenance and peer review statement has been included.

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Contributors ATL and CØ conceived the study. ATL, CMJ, KBD, EC and CØ designed the study. CØ took the lead in drafting the study protocol manuscript, receiving inputs and feedback from ATL, CMJ, EC and KDB. All authors approved the final protocol manuscript.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not required.

Ethics approval The study is registered with the Danish Data Protection Agency (19/22672), and data will be stored at a logged server at Open Patient data Explorative Network (OPEN_938), Department of Clinical Research, University of Southern Denmark. The study is approved by the Regional Committees on health research Ethics for Southern Denmark (S-20192000-111).

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data sharing not applicable as no data sets were generated and/or analysed for this study yet. Data sharing is not applicable as there is no data set yet.

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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?	
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	
Occupation	3	What was their occupation at the time of the study?	
Gender	4	Was the researcher male or female?	
Experience and training	5	What experience or training did the researcher have?	
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	
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	
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	
Sample size	12	How many participants were in the study?	
Non-participation	13	How many people refused to participate or dropped out? Reasons?	
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	
Field notes	20	Were field notes made during and/or after the inter view or focus group?	
Duration	21	What was the duration of the inter views or focus group?	
Data saturation	22	Was data saturation discussed?	
Transcripts returned	23	Were transcripts returned to participants for comment and/or	

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?	
Description of the coding tree	25	Did authors provide a description of the coding tree?	
Derivation of themes	26	Were themes identified in advance or derived from the data?	
Software	27	What software, if applicable, was used to manage the data?	
Participant checking	28	Did participants provide feedback on the findings?	
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	
Data and findings consistent	30	Was there consistency between the data presented and the findings?	
Clarity of major themes	31	Were major themes clearly presented in the findings?	
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	

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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Health professionals’ perspectives of patients’ and family members’ needs in emergency departments, improving patient pathways - a qualitative study

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Abstract

Objective: Besides working in a fast-paced environment, healthcare professionals in the emergency department are required to promptly respond to patient's needs as well as achieve their organizational goals, which can be challenging. This study investigates how healthcare professionals perceive and support the needs of patients and family members discharged after a brief emergency department stay.

Design: The study used focus group discussions. The text material was analyzed using systematic text condensation.

Setting: Data were collected from two large emergency departments in Denmark.

Participants: 16 health care professionals were purposively sampled to participate in three focus group discussions.

Results: Three main themes were condensed: (1) creating a trustful and reassuring relationship (2) responding to family members: a bother or a benefit, and (3) working as an interdisciplinary team. The study indicated the need for increased interdisciplinary collaboration to reduce discrepancies in information, meet patient and family needs, and deliver a holistic approach. A technical solution was suggested to facilitate collaborative teamwork.

Conclusion: The study pointed out an existing gap between emergency healthcare professionals' perceptions of patients' and family members' needs, and the provision of the current patient and family support. Suggestions for a future intervention include focusing on the interdisciplinary teamwork, facilitated by a technical solution to support a person- and family-centered informative approach.

Strengths and limitations of this study

- ⇒ The qualitative approach allowed us to gather in-depth knowledge in an under-researched area within emergency care.
- ⇒ The focus group discussions were thoroughly analyzed to define the three overarching themes and quotations support the trustworthiness of the findings.
- ⇒ The limitation of this focus group study was that the participants were recruited from two Danish hospitals, therefore, findings are contextual and reflect a Danish context.
- ⇒ The methodology limits generalization, although we obtained theme saturation and thoroughly described the context of the study

Introduction

International guidelines have highlighted the need for an effective treatment plan within 4 hours to prevent overcrowding in emergency departments (EDs) [1]. Healthcare professionals (HCPs) in the EDs are aware of the importance of productivity, with a high patient flow as one key element in the organizational structure [2]. However, a British ethnographic study revealed that HCPs believed that approaches to productivity should be patient-centered, and was aware that the productive line could potentially be dehumanizing comprising patients' sensibilities [2]. An Australian qualitative study exploring HCPs experiences during the implementation of the 4-hour rule in the ED [1], found that a trade-off was that the HCP-patient communication was reduced because of an increased patient flow [1]. HCPs, therefore need to balance patient interaction in the ED, as they strive to achieve organizational goals, create caring encounters, and acknowledge patients' individual needs to improve care [3-5]. Furthermore, a prospective study conducted in an ED in Hong Kong underlined that there is a need for HCPs to pay more attention in communicating with acute patients, as there is a higher risk of readmission if patients do not feel confident in the discharge plan [6, 7].

Research has highlighted the patients' and family perspective and their needs and preferences when being discharged from the ED [8, 9]. Particularly, the need for clear communication in an ever-changing environment. The challenges within the ED and the many interruptions of patient encounter reduces the patients' feeling of reassurance [8] and challenges their ability to understand discharge information [9-12]. A systematic review investigating discharge instructions showed that patients' found communicating with HCPs was principally performed in a one-way conversation [9]. The medical discourse did not allow the possibility of asking questions, which did not promote the patients' confidence in being discharged and may lead to readmission [9].

Involvement of family members in discharge information such as medication and treatment adherence is acknowledged internationally to improve patient outcomes [13, 14]. Also, family inclusion and partnership in care strengthen patients' readiness for discharge [6]. This is particularly important for patients with brief hospital stays where there is little time for HCPs to prepare patients for discharge[10]. Family inclusion in care discussion has been found to improve patient outcomes in the ED, by improving understanding of information and symptom management at home but also to help with care related matters whilst in ED [10, 15, 16]. However, a recent study on patient and family needs highlighted that patients and families perceive HCP-patient interactions in the ED as fragmented and without family involvement causing insecurity at time of discharge for both patients and family members [10]. Similarly, qualitative studies on patient/family involvement in the ED point out that a culture supporting inclusion of the voices of patients and families requires the organization to move away from a hierarchical expert approach towards a person-and family-centered approach [17-19]. An in-depth understanding of current practices and barriers to a person and family-centered approach are needed to improve patient and family experience in ED and meet their needs to reduce readmission [7, 20].

Therefore, this study aim to generate knowledge on how to address the patients' and family members' needs during a brief ED stay (<24 hours of admission in an ED) from a HCP perspective and their suggestions towards changed practices.

Objective

The aim of this study is twofold:

- To investigate how HCPs in the ED perceive the needs of patients and family members discharged within 24 hours and
- To explore in which way these can be supported in organizing improved patient pathways.

Methods

Study design

This study is part of the first phase of a three-phase participatory design study, with an overall aim to improve the experiences of patients and their family members discharged from the ED within 24 hours [21, 22]. Participatory design is a research methodology where involvement of representatives of future end-users of the research field is a core element [22]. Phase one focuses on uncovering and understanding needs and practices [23, 24], whereas Phase two and three focus on developing and testing a solution to cover the needs identified in Phase one. The principles of phenomenological investigation are traditionally used in the initial phase [23, 25], and have inspired the data generation in this study.

Phase one in this study aimed to gain knowledge of which needs and preferences there exist in the ED from the perspectives of patients, family members and HCPs. We chose to publish data in two separate manuscripts because of the large amount of data. Data presenting knowledge of the patient and family member's needs, were gathered by participant observational studies and interviews [10]. Data presented in the present study was derived from focus groups with HCPs. Focus groups were chosen to produce a rich understanding of participants' experiences and beliefs and generate knowledge from the interactions between the participants [26]. The Consolidated Criteria for Reporting Qualitative Research were used as a checklist [27].

Settings

HCPs attending the focus groups were recruited from two EDs: (1) Odense University Hospital, which is a 1000-bed university hospital, provides care for a population of 230,000 adults living in the Region of Southern Denmark. The ED has 69,000 annual attendees and 150 and 20 permanently employed nurses and physicians, respectively (2) Hospital of Lillebaelt is a 320-bed hospital. The ED has 50,000 annual attendees and 150 and 14 permanently employed nurses and physicians, respectively.

Participants and recruitment

An email containing the information for the study and invitation to participate in the focus groups was sent by the management to the purposive group of HCPs. The first author discussed the focus group participants with the manager from each ED. The process of creating the focus groups included the idea of a heterogeneous group to ensure variation in age, qualifications [26], and personality, in order to improve discussions and outcome [28].

Eligibility criteria*:* Nurses and physicians who have been employed at the Emergency department for more than 6 months.

Sample size*:* Three focus groups of three to seven participants per group were formed [29]. Due to the COVID-19 restrictions, participants from the two sites were not combined.

Data collection

The research team was a group of experienced qualitative researchers and clinicians. The first author was an experienced emergency clinician. The second and last authors had no recent experience with emergency care.

The three focus group discussions were conducted in December 2020. The first author facilitated the focus groups. The second or last author observed, wrote field notes including group interactions and non-verbal language and validated the content of the discussion. Each focus group discussion was split into two parts. Initially, the participants were asked to write three positive and negative thoughts on treating and caring for patients discharged from the ED within 24 hours. Then, they discussed their perspectives and possible ways to optimize the care. In the second part, participants were introduced to quotes and findings from the study on patient and family member perspectives [10]. Patients and family members had highlighted a need for an increased understanding of them being in a vulnerable state of mind during acute admission in the ED, moreover they described a need for person-centered information with genuine involvement of family members[10].

The discussions then commenced with the participants' thoughts on these findings. The following is an example of a quote by a patient and which the participants were asked to discuss: 'I need them to take the burden off my shoulders' (Male patient in his 50's).

Using quotes encouraged discussion of how to address patients' and family members' needs, with a focus on possible differences and similarities in HCPs' perceptions of quality in treatment and care. The discussions lasted 1–1.5 hours. One was held at the ED in Kolding and two in Odense. All focus groups were recorded and transcribed verbatim by the first author. Observer field notes were included as data in the analysis to provide context and improve reliability [30].

Patient and public involvement

The local patient and family member council have read the overall study protocol and gave proposals for improvements.

Ethics

In accordance with the Declaration of Helsinki and the Ethical Guidelines for Nursing Research [31, 32], oral and written informed consent was obtained from all of the participants. The study did not need ethical approval from the National Committee on Health Research Ethics (REF: S-20192000-111).

Ethics committee and IRB name: Committee on Health Research Ethics in the Region of Southern Denmark committee no. 1 ref. Prof. Kirsten Kyvik. Reason for exemption: This study is an interview study without any intervention.

The study was registered with the Record of Data Process of Registry of Southern Denmark (19/22672). Data were stored in SharePoint (Microsoft Corporation) and OPEN_938.

Analysis

The data analysis was inspired by systematic text condensation [33]. The analysis was performed by the first author, who coded the data. The systematic condensation and interpretation of data supported by quotes from the focus groups was discussed continuously with the whole author group to reach agreement. The process was conducted in four steps: (1) total impression: identifying themes, (2) identifying and sorting meaning units: themes to codes, (3) condensation: code to meaning, and (4) synthesis: condensation to descriptions and concepts of final categories [34]. Finally, patterns across data were identified and agreed on.

Results

Participant descriptions

Three focus groups were conducted, comprising 16 HCPs (Table 1). According to the protocol of the overall study, please see supplementary file [21], we planned four focus group with in all 20 participants. Therefore, 20 HCPs were approached. However, two physicians were unable to attend due to busy schedules and two nurses were off work sick on the day of the focus group.

Table 1: Participants' demographic data

Demographics	Statistics
Gender and age n	
Female	**15**
Male	**1**
Age (years)[a], mean	**38**
Qualifications	
Registered nurse	**14**
Physician	**2**
Professional experience (years)[b]	
<5 years	**7**
>5 years	**11**
Experience in the ED (years), mean	**3.5**

[a] Range: 25–59 years

[b] Range: 2–25 years

Three main themes with belonging subthemes were derived from patterns across the focus group discussions and supportive notes; Creating a trustful and reassuring relationship, Responding to family members: a bother or a benefit, Working as an interdisciplinary team.

Creating a trustful and reassuring relationship

This theme derived from consistent expressions by HCPs, of patients having a need to gain trust in HCPs from the very beginning of their stay in the ED. Trust was pronounced as fundamental in helping patients to gain reassurance in the acute and unpredictable situation. Factors involved in creating trust was through prompt assessment, providing information and by addressing patients' anxiety and fear.

Prompt assessment

HCPs argued that a trustful relationship often began through fast assessment. Fast assessment was defined by being assessed quickly upon arrival.

'It is my impression, if patients feel they are trapped in uncertainty, e.g. if they are not assessed immediately upon their arrival, it might affect our ability to create a trustful and caring encounter' (Nurse, focus group 1).

Fast assessment aimed to provide a preliminary evaluation of the patients' current condition and to plan the initial treatment and observational regime.
In all focus groups it was stated that it was essential for patient pathways to have a trustful beginning, otherwise it could be difficult to gain a confident relationship among patients and HCPs due to the shortness of time in the ED.

'We have to get a good start. If the patients experience from the beginning of their stay, that HCPs takes responsibility, trust will be developed. If not, it promotes distrust... and from that point the relationship might be difficult, due to the brief time spend in the ED' (Nurse, focus group 3).

However, participants discussed that fast assessment did not always seem to be an option, due to the hectic and ever-changing nature of the ED. In several incidents, HCPs felt powerlessness as the hectic environment affected how they could manage to provide person-centered care as part of a trustful relationship.

‘Undisturbed time is really important if we want to succeed in providing person-centered care. During most of my shifts I get interrupted, e.g. by three phone calls, during patient conversations. The patients might think that I do not have a genuine interest in listening to their stories’ (Nurse, focus group 2).

Information

The patients’ need for continuous information was highlighted by the HCPs. Most importantly, information should be consistent and accurate, as this again provided trust and reassurance.

‘The patients are unaware of the severity of their illness. You therefore have to be explicit and clear about your thoughts, as this creates trust and eases their anxiety’ (Nurse, focus group 3).

In order for patients to be able to cognitively understand and perceive the information correctly, reassurance was mentioned as a key element.

‘If the patients do not feel calm and have faith in HCPs, it is difficult to understand any given information’ (Nurse, focus group 2).

Anxiety and fear addressed by HCPs

Several HCPs stated they felt patients’ anxiety could be reduced by asking them questions concerning their thoughts or worries of becoming acutely ill, if time and skills were available.

‘To talk about their worries and how they feel more psychologically in the situation, can create reassurance’ (Nurse, focus group 2).

Moreover, HCPs argued that working in the ED demanded a technical approach to treatment and care more than a psychological and social approach. The technical approach was presumably dominant as the ED setting required HCPs to be able to act fast and work systematically in care and treatment, due to critically ill patients and a high and continuous flow of new arriving patients.

'Our focus is often on physical issues, to begin treatment and to keep up the patient flow. There might be a risk of overlooking what is most important for the patients. This could cause anxiety, I think' (Physician, focus group 3).

Responding to family members: a bother or a benefit

HCPs agreed that family members play an important role both during the patients' ED stay and after discharge. Family members were described to help with providing important information, understanding discharge information, and preventing readmission but was also in some cases seen as time consuming.

Providing important information

It was argued that family members often have a lot of information about the patient and are usually not in the same mental level of distress as the patients. They often help physicians to clarify symptoms and find an accurate diagnosis.

'Family members play a pivotal role, because often it is conversations with them that help us diagnose the patients accurately or even avoid unnecessary examinations' (Physician, focus group 3).

Helping to understand discharge information

Due to many encounters and lots of information in the ED, HCPs indicated that family members and patients may have difficulty remembering information given orally. The use of written material concerning the treatment plan was therefore suggested as part of the discharge conversation, even though it might be time consuming. HCPs saw this would support the inclusion of family members not present in the ED, as they would be able to read the discharge information and instructions as well.

'When patients are readmitted, I realize how little they were able to remember from the discharge instructions. It would be relevant to have the information in writing instead. This could be a way to empower the family as one unit' (Nurse, focus group 2).

HCPs noted that patients who spent only short stays in the ED were often labelled as having "uncomplicated' conditions. They were therefore at risk of getting insufficient attention concerning their need for discharge information. Insufficient discharge information made it challenging for the family to support the patient and affected both the patient and the family negatively.

'Our core task is to maintain a high patient flow. In my experience, the uncomplicated patients with low triage level and being able to self-care often suffer from that fact' (Physician, focus group 3).

HCPs suggested a discharge coordinator (technical or personal) in the ED to prevent fractional discharge information being provided, for all patients, whether they had complex care issues or uncomplicated needs.

Preventing readmissions

HCPs noted that not involving family members could increase the risk of readmission.

'Involving the family might prevent readmissions. We need to create a space for all voices to be heard. We need to take care of potential risks of readmission, such as lack of pain control' (Nurse focus group 1).

It was discussed that family members often play a central role after discharge, and there therefore was a need to empower them to handle the care and treatment plan. This empowerment was seen as essential, because otherwise family members might not feel confident in helping the patient to manage possible recurring symptoms appropriately, and perhaps instead eventually urge them to call an ambulance.

'We need to make sure the family members are able to handle the situation after discharge… Do they have the physical or/and cognitive resources to help the patient appropriately or do we need to e.g. contact the primary home care for assistance. That we can only find out if we involve the family' (Nurse, focus group 1).

Being time consuming

Even though HCPs found involvement of the patient and their family members to be beneficial, it was discussed as problematic, especially in busy periods. In such instances, HCPs discussed a need to just prioritize the patients and commence the treatment, to prevent overcrowding in the ED. Due to the short period of time patients spend in the ED, many family members were not able to attend the department before discharge. Disagreements arose in the groups on whether involving family members needed to be prioritized or not.

'I do not prioritize calling the family if the department is busy. This must be done by the patient… even though, I am aware it can be difficult for the patient to know the answers to all the questions raised by the family, which might affect whether the family member feels confident or not' (Nurse, focus group 2).

Working as an interdisciplinary team

In all groups the benefits of working as an interdisciplinary team were discussed and suggestions towards its organizations appeared.

Benefits of a close teamwork

HCPs found it challenging to assemble all the information and knowledge regarding the care, treatment, and family. Subsequently, patient discharge conversations would often become fragmented and confusing for the patients and their families.

'Currently, we cannot ensure that everything is covered. We do what is expected from our point of view and send them home. I believe this may, in some cases, cause insecurity and distrust' (Nurse, focus group 3).

They also found it difficult to identify possible obstacles to the patients adhering to the discharge plan, or to detect how the patients would cope with their health situation in general. Interdisciplinary teamwork was presumed to have a positive effect on how HCPs managed to accommodate patient and family members' needs towards discharge.

'To help our patients, we need short multi-disciplinary 'brush ups'. In that way the staff are kept on the right track, because relevant information could be shared' (Nurse, focus group 3)

In the EDs, there was no tradition for interdisciplinary teamwork, apart from the trauma rooms. Specific needs in order to benefit from this collaborative approach were seen as the level of information and communication, the involvement of social networks, and collaboration with community nurses, to ensure a discharge plan that accommodates patients' mental and psychical abilities so they can manage as intended.

'We have talked about reorganizing the workflow many times, but we found no solutions optimal. However, we have discussed all the benefits regarding improved collaboration' (Nurse, focus group 3).

Suggestions towards improved teamwork

Suggestions regarding a joint discharge conversation protected from disruptions, involving nurses, physicians, and family members, were initiated. A discharge conversation was viewed as a possible way to make a precise update on the plan, thus promoting collaboration with the community or family members not physically present in the ED, but HCPs also discussed obstacles in having to wait for each other, to enter a discharge conversation as a team. This approach could be a form in which information was given as a whole and not in fractional form.

'If we all were gathered at the time of discharge, we would be able to summarize the treatment plan and care issues. But it could be difficult as it would affect the workflow' (Physician, focus group 3).

HCPs are aware that patients discharged after a few hours in the ED have potentially both given and received lots of information that could be difficult to understand and inconsistent in their stressful state of mind.

'By the time of discharge, patients should have information in writing because they may not be able to remember after returning to their homes, considering their stressed state of mind. Currently, this is not implemented but may be relevant in the future' (Nurse, focus group 3).

Health technical solutions were suggested as the 'discharge facilitator'. The technical solution should convey continuous and consistent information for patients and their family members during their stay in the ED. Likewise, the solution should enable the patient and family members to revisit the information at home, and allow HCPs to get a view of the patients' course of treatment in the ED.

'If we had a system that facilitated the progress of ED activities and was available for the patients as well, the HCPs would be able to get a fast brush up on the next steps. It would increase the quality of the health-related discharge information we provide' (Nurse, focus group 1).

Discussion

Stronger interdisciplinary collaboration might improve patient pathways in the Emergency department

Our findings highlighted that the ED organizational structure often provided short and fragmented encounters between HCPs, patients and family members due to a busy environment. This appears to be out of step with what HCPs highlighted to be important from a person- and family-centered perspective where a trustful relationship should be focused. A gap is present between what HCPs are 'forced' to handle to avoid situations with overcrowding and what they actually value and want to improve. This study identified that HCPs stressed a need for patient flow in the ED and suggested a technical tool to improve engagement with patients and family members.

A Swedish qualitative study investigated strategies used by HCPs in the ED and recommended that HCPs be given tools to handle hectic and stressful situations, to enable quality care at all times regardless workload [5]. They highlighted a gap in the ED where the HCPs were forced to comprise high workload and patients' needs. Periods with high workload created moral distress because time is spent on patient flow discussions rather than quality patient-HCPs encounters. However, no specific tools were tested in the Swedish study [5].

Clear communication was highlighted as the optimum way to develop therapeutic relationships with patients in the initial ED assessment in our study. Communication was also underlined as important to accommodate from the patient and family perspective [10]. Clear HCPs communication helped reduce patient burden, develop trust and increase reassurance [10]. Different models of communication strategies have been tested in support of creating improved discharge information [35, 36]. As was the Calgary Cambridge model, which showed high reliability in a person-centered communicative approach [37]. To meet patient and family needs in brief ED encounters HCPs may find the 15-minute family interview framework useful, as it create a clear structure for the conversation [38].

The HCPs in our study argued that they were trained in a task-focused culture and a technical life-saving approach more than a person-centered approach. The Swedish study [5] also found that HCPs possessed two strategies: a proactive strategy focusing on flow and a reactive strategy with the values of delivering person-centered communication [5]. Patients and families express that if HCPs don't provide person-centered communication it causes feelings of being 'just another patient in a line' leading to insecurity, distrust and fear [10]. A prospective cohort study conducted by Body et al., [39], found that HCPs in ED were required to not only focus on physical symptoms and medications but also on easing suffering [39]. This includes managing emotional distress, developing therapeutic partnerships, and tailored information in preparation for discharge [39].

HCPs in our study identified the need to balance organizational structure which demanded high patient flow with their awareness of the needs of patients and family members needs for trustful encounters and tailored information. To enable a balance of patient flow and person-and family-centered care, HCPs recommended improved interdisciplinary teamwork. An organizational culture of interdisciplinary teamwork has been shown to enable mentoring and development of HCPs to achieve accurate and timely assessment and the delivery of person- and family-centered care [5]. Interdisciplinary teamwork was found to prevent misunderstandings and inconsistencies in the information given [5]. These findings are echoed by Von Knorring et al., [40] who found that 36% of ED patients experienced inconsistency of information [40]. Inconsistency was found to be a result of lack of teamwork, and future research focusing on the impact of different types of teamwork was suggested [40].

HCPs in our study propose the development of an unspecified health technical solution providing information in-hospital and follow-up discharge information. The solution was suggested as an integrated tool in the interdisciplinary teamwork, to empower the patients with continuous information and clarity of their course of treatment, despite busy periods in the ED. In a Korean pilot study by Kim et al., [41] it was found that an application-based service of personal mobile health records provided with patient-centered medical information improved self-management of patients' health conditions and experiences in the ED [41]. The system required multiple steps, where the patients downloaded an application to their personal mobile phone and create an account to share emergency department data on their private mobile phone [41]. Previous research on promoting person- and family-centered outcomes, has highlighted that patients' personal characteristics and preferences for information, and their specific disease were influencing factors, but the impact of the environment is often overlooked when seeking solutions [42, 43]. The involvement of consumers as end-users in developing a technological solution to cover identified needs helps towards creating solutions to improve clinical practice [44, 45]. However, barriers in the existing culture and its readiness to change must be identified to avoid resistance to change [46].

Can family involvement and ED care be matched?

In our study, HCPs positively associated family involvement with improved care in the ED. Family support and understanding of the treatment and discharge plans were found to influence revisits to the ED. Other research has shown that ED nurses found working with families to be either a bother or beneficial, depending on whether family members understand the healthcare system [14, 47]. Furthermore, HCPs discussed whether they were obligated to involve family members. The culture and attitudes influence how HCPs engage with families, and HCP training in communication skills is required to improve their relationship with families [16]. Based on our findings, future studies focusing on designing person- and family-centered strategies and how they can improve ED care are warranted. Our study suggests that it might be beneficial using technical solutions to integrate tailored information and therapeutic communication in order to reduce the existing gap between person-related needs and organizational needs of productivity and high patient flow.

Limitations

This was a national study, limited by the fact that the Danish healthcare system is organized differently than other countries. Data were collected using qualitative methods, whereas a broader perspective could be obtained by surveys. Due to busy schedules, only two physicians participated in the focus groups. Collecting data from the groups was difficult because they were either too homogenous, suffering from an absence of interaction, or too heterogeneous with the risk of larger disagreements [26]. Managers of the ED participated in constructing the groups to achieve the best balance of HCPs.

Conclusion

There is a gap between ED HCPs' perception of the needs of patients and family members, and what is currently delivered during short stays in the ED. The findings suggest that interdisciplinary teamwork could be the key to ensuring tailored patient- and family-centered information and goals developed within the ED. In the future, using technology to enable the delivery of tailored information to support person- and family-centered informative approaches in and after ED treatment should be considered. Technology enables the patient and family members to revisit the information at home, and the HCPs to view the patients' course of treatment.

Table legend:

Table 1: Participants' demographic data

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Data sharing: Data can be shared on reasonable request.

Supplementary file: The study protocol can be accessed:

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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?	
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	
Occupation	3	What was their occupation at the time of the study?	
Gender	4	Was the researcher male or female?	
Experience and training	5	What experience or training did the researcher have?	
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	
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	
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	
Sample size	12	How many participants were in the study?	
Non-participation	13	How many people refused to participate or dropped out? Reasons?	
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	
Field notes	20	Were field notes made during and/or after the inter view or focus group?	
Duration	21	What was the duration of the inter views or focus group?	
Data saturation	22	Was data saturation discussed?	
Transcripts returned	23	Were transcripts returned to participants for comment and/or	

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?	
Description of the coding tree	25	Did authors provide a description of the coding tree?	
Derivation of themes	26	Were themes identified in advance or derived from the data?	
Software	27	What software, if applicable, was used to manage the data?	
Participant checking	28	Did participants provide feedback on the findings?	
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	
Data and findings consistent	30	Was there consistency between the data presented and the findings?	
Clarity of major themes	31	Were major themes clearly presented in the findings?	
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	

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Health professionals' perspectives of patients' and family members' needs in emergency departments and patient pathway improvement: a qualitative study in Denmark

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Abstract

Objective: Besides working in a fast-paced environment, healthcare professionals (HCPs) in the emergency department (ED) are required to promptly respond to patients' needs and simultaneously achieve their organizational goals, which can be challenging. This study investigates how HCPs perceive and support the needs of patients discharged after a brief ED stay, as well as their family members.

Design: The study used focus group discussions. The text material was analysed using systematic text condensation.

Setting: Data were collected from two large EDs in Denmark.

Participants: Sixteen HCPs were sampled purposively to participate in three focus group discussions.

Results: Three main themes were condensed: (1) creating a trustful and reassuring relationship; (2) responding to family members: a bother or a benefit; and (3) working as an interdisciplinary team. The study indicated the need for increased interdisciplinary collaboration to reduce discrepancies in information dissemination, to meet patient and family needs and to deliver a holistic approach. A technical solution was suggested to facilitate collaborative teamwork.

Conclusion: The study highlighted an existing gap between emergency HCPs' perceptions of patients' and family members' needs and the provision of the current patient and family support. Suggestions for future interventions include focusing on interdisciplinary teamwork, facilitated by a technical solution to support a person- and family-centred informative approach.

Strengths and limitations of this study

⇒ The qualitative approach allowed us to gather in-depth knowledge in an under-researched area within the domain of emergency care.

⇒ The focus group discussions were thoroughly analysed to define the three overarching themes; quotations support the credibility of the findings.

⇒ The limitation of this focus group study was that the participants were recruited from only two Danish hospitals, so the findings are contextual and reflect a Danish context.

⇒ The methodology limits generalization, although we obtained theme saturation and thoroughly described the context of the study.

INTRODUCTION

International guidelines have highlighted the need for an effective treatment plan within 4 hours to prevent overcrowding in emergency departments (EDs) [1]. Healthcare professionals (HCPs) in EDs are aware of the importance of productivity, with high patient flow as a key element in the organizational structure [2]. Based on a British ethnographic study, HCPs believe that approaches to productivity should be patient-centred; moreover, they are aware that the productivity line could be dehumanizing, thus compromising patients' sensibilities [2]. An Australian qualitative study exploring HCP experiences during the implementation of the four-hour rule in the ED [1] found a trade-off, namely, the reduction of HCP–patient communication because of an increased patient flow [1]. Therefore, HCPs need to balance patient interaction in the ED while striving to achieve organizational goals, create caring encounters and acknowledge patients' individual needs to improve care [3–5]. Furthermore, a prospective study conducted in an ED in Hong Kong underscored the need for HCPs to pay more attention in communicating with acute patients, as there is a higher risk of re-admission if patients do not feel confident in the discharge plan [6, 7].

Research has highlighted patient and family perspectives and their needs and preferences when being discharged from the ED [8, 9], particularly the need for clear communication in an ever-changing environment. The challenges within the ED and the many interruptions in patient encounters reduce patients' feelings of reassurance [8] and challenge their ability to understand discharge information [9–12]. A systematic review investigating discharge instructions showed that patients' communication with HCPs was principally performed in one-way conversations [9]. The medical discourse did not allow the possibility of asking questions, which did not promote the patients' confidence in being discharged and may lead to re-admission [9].

The involvement of family members in discharge information, such as medication and treatment adherence, has been acknowledged globally as a factor in improving patient outcomes [13, 14]. Moreover, family inclusion and partnership in care strengthen patients' readiness for discharge [6]. This is particularly important for patients with brief hospital stays, in which there is little time for HCPs to prepare patients for discharge[10]. Family inclusion in care discussion has been found to improve patient outcomes in EDs by enhancing the understanding of information and symptom management at home, as well as helping with care-related matters whilst in the ED [10, 15, 16]. However, a recent study on patient and family needs highlighted that patients and families perceive HCP–patient interactions in the ED as fragmented and without family involvement, giving rise to feelings of insecurity at the time of discharge for both patients and family members [10]. Similarly, qualitative studies on patient/family involvement in the ED highlight that a culture supporting the inclusion of the voices of patients and families requires the organization to move away from a hierarchical expert approach towards a person- and family-centred approach [17–19]. An in-depth understanding of current practices and barriers to a person and family-centred approach are needed to improve patient and family experience in EDs and meet their needs to reduce re-admission [7, 20].

Therefore, this study aims to generate knowledge on addressing patients' and family members' needs during a brief ED stay (<24 hours of admission in an ED) from the perspective of HCPs and their suggestions for changes in practice.

Objective

The aim of this study is twofold:

- to investigate how HCPs in the ED perceive the needs of patients and family members discharged within 24 hours, and
- to explore how these can be supported in organizing improved patient pathways.

METHODS

Study design

This research is part of the first phase of a three-phase participatory design study, with an overall aim to improve the experiences of patients and their family members discharged from the ED within 24 hours [21, 22]. Participatory design is a research methodology wherein the involvement of representatives of future end-users of the research field is a core element [22]. Phase 1 focuses on uncovering and understanding needs and practices [23, 24], whereas Phases 2 and 3 focus on developing and testing a solution to cover the needs identified in Phase 1. The principles of phenomenological investigation are traditionally used in the initial phase [23, 25] and underpin the data generation in this study.

Phase 1 in this study aimed to gain knowledge on which needs and preferences exist in the ED from the perspectives of patients, family members and HCPs. We chose to publish two separate manuscripts because of the large amount of data. Data presenting knowledge of the patients' and family member's needs were gathered through participant observational studies and interviews [10]. The data in the present study were derived from focus groups with HCPs. Focus groups were chosen to produce a rich understanding of participants' experiences and beliefs and generate knowledge from the interactions between the participants [26]. The Consolidated Criteria for Reporting Qualitative Research was used as a checklist [27].

Settings

The HCPs who attended the focus groups were recruited from two EDs. The first is Odense University Hospital, a 1000-bed university hospital that provides care for a population of 230,000 adults living in the Region of Southern Denmark. Its ED has 69,000 annual attendees and 150 and 20 permanently employed nurses and physicians, respectively. The second is Hospital of Lillebaelt, which is a 320-bed hospital. Its ED has 50,000 annual attendees and 150 and 14 permanently employed nurses and physicians, respectively.

Participants and recruitment

An email containing information about the study and the invitation to participate in the focus groups was sent by the management to the purposive group of HCPs. The first author discussed the focus group participants with the manager from each ED. The process of creating the focus groups included the idea of a heterogeneous group to ensure variation in age, qualifications [26] and personality to improve the discussions and outcomes [28].

The eligibility criterion was nurses and physicians who have been employed at the ED for more than six months.

For the sample size, three focus groups of three to seven participants per group were formed [29]. Due to COVID-19 restrictions, participants from the two sites were not combined.

Data collection

The research team was composed of a group of experienced qualitative researchers and clinicians. The first author was an experienced emergency clinician. The second and last authors had no recent experiences with emergency care.

The three focus group discussions were conducted in December 2020. The first author facilitated the focus groups. The second or last author observed, wrote field notes including group interactions and non-verbal language, and validated the content of the discussion. Each focus group discussion was split into two parts. Initially, the participants were asked to write three positive and negative thoughts on treating and caring for patients discharged from the ED within 24 hours. Then, they discussed their perspectives and the possible ways to optimize care. In the second part, the participants were introduced to quotes and findings from the study on patient and family member perspectives [10]. The patients and family members had highlighted the need for an increased understanding of their vulnerable state of mind during acute admission in the ED; moreover, they described a need for person-centred information with genuine involvement of family members[10].

The discussions then commenced with the participants' thoughts on these findings. The following is an example of a quote by a patient that the HCP participants were asked to discuss: 'I need them to take the burden off my shoulders' (male patient in his 50s).

Using quotes from the patient/family study[10] encouraged discussions of how to address patients' and family members' needs, with a focus on possible differences and similarities in HCPs' perceptions of quality in treatment and care. The discussions lasted for 1–1.5 hours. One was held at the ED in Kolding and two in Odense. All focus groups were recorded and transcribed verbatim by the first author. Observer field notes were included as data in the analysis to provide context and improve reliability [30].

Patient and public involvement

The local patient and family member council have read the overall study protocol and gave proposals for improvements.

Ethics

In accordance with the Declaration of Helsinki and the Ethical Guidelines for Nursing Research [31, 32], oral and written informed consent were obtained from all of the participants. The study did not require an ethical approval from the National Committee on Health Research Ethics (Ref. No. S-20192000-111). Ethics committee and IRB name: Committee on Health Research Ethics in the Region of Southern Denmark Committee No. 1 Ref. Prof. Kirsten Kyvik. Reason for exemption: This study is an interview study without any intervention.

The study was registered with the Record of Data Process of Registry of Southern Denmark (19/22672). Data were stored in SharePoint (Microsoft Corporation) and OPEN_938.

Analysis

The data analysis was inspired by systematic text condensation [33]. The analysis was performed by the first author, who coded the data. The systematic condensation and interpretation of data supported by quotes from the focus groups were conducted continuously with the whole author group to reach a consensus. The process was conducted in four steps: (1) total impression: identifying themes; (2) identifying and sorting meaning units: themes to codes; (3) condensation: code to meaning; and (4) synthesis: condensation to descriptions and concepts of final categories [34]. Finally, patterns across data were identified and agreed upon.

RESULTS

Participant descriptions

Three focus groups comprising 16 HCPs were conducted (Table 1). According to the protocol of the overall study [21], we planned four focus groups for the 20 participants. Therefore, 20 HCPs were approached. However, two physicians were unable to attend due to their busy schedules and two nurses were off work due to sickness on the scheduled day of the focus group.

Table 1: Participants' demographic data

Demographics	**Statistics**
Gender and age, n	
Female	**15**
Male	**1**
Age (years)^{a}, mean	**38**
Qualifications	
Registered nurse	**14**
Physician	**2**
Professional experience (years)^{b}	
<5 years	**7**

>5 years	**11**
Experience in the ED (years), mean	**3.5**

[a] Range: 25–59 years

[b] Range: 2–25 years

Three main themes with concomitant subthemes were derived from the patterns across the focus group discussions and supportive notes: creating a trustful and reassuring relationship, responding to family members: a bother or a benefit, and working as an interdisciplinary team.

Creating a trustful and reassuring relationship

This theme was derived from consistent expressions by HCPs, of patients having a need to gain trust in HCPs from the very beginning of their stay in the ED. Trust was pronounced as fundamental in helping patients gain reassurance in acute and unpredictable situations. The factors involved in creating trust are prompt assessment, providing information and addressing patients' anxieties and fears.

Prompt assessment

The HCPs argued that a trustful relationship often began through prompt assessment. Prompt assessment was defined by being assessed quickly upon arrival.

'It is my impression that if patients feel they are trapped in uncertainty, for instance, if they are not assessed immediately upon their arrival, it might affect our ability to create a trustful and caring encounter' (nurse, focus group 1).

Prompt assessment aims to provide a preliminary evaluation of the patients' current conditions and plan their initial treatments and observational regimes.

In all focus groups, it was stated that it was essential for patient pathways to have a trustful beginning; otherwise, it could be difficult to gain a confident relationship among patients and HCPs due to the shortness of time spent in the ED.

'We have to get a good start. If the patients experience from the beginning of their stay that HCPs take responsibility, trust will be developed. If not, distrust is promoted, and from that point, the relationship might become difficult due to the brief time spent in the ED' (nurse, focus group 3).

However, the participants discussed that prompt assessment did not always seem to be an option due to the hectic and ever-changing nature of the ED. In several incidents, HCPs felt powerless, as the hectic environment affected how they provide person-centred care as part of a trustful relationship.

'Undisturbed time is really important if we want to succeed in providing person-centred care. During most of my shifts, I get interrupted, for instance, by three phone calls, during patient conversations. The patients might think that I do not have a genuine interest in listening to their stories' (nurse, focus group 2).

Information

The patients' need for continuous information was highlighted by the HCPs. Most importantly, information should be consistent and accurate, as this also fosters trust and reassurance.

'The patients are unaware of the severity of their illness. You, therefore, have to be explicit and clear about your thoughts, as this creates trust and eases their anxiety' (nurse, focus group 3).

For patients to be able to cognitively understand and perceive the information correctly, reassurance was mentioned as a key element.

'If the patients do not feel calm and have faith in HCPs, it is difficult to understand any given information' (nurse, focus group 2).

Anxiety and fear addressed by HCPs

Several HCPs felt that patients' anxieties could be reduced by asking them questions concerning their thoughts or worries of becoming acutely ill if time and skills were available.

'Talking about their worries and how they feel psychologically about the situation can create reassurance' (nurse, focus group 2).

Moreover, the HCPs argued that working in the ED demanded a technical approach to treatment and care more than psychological and social approaches. The technical approach was presumably dominant as the ED setting required HCPs to be able to act fast and work systematically in care and treatment due to critically ill patients and a high and continuous flow of new incoming patients.

'Our focus is often on physical issues, to begin treatment and to manage the patient flow. There might be a risk of overlooking what is most important for the patients. This could cause anxiety, I think' (physician, focus group 3).

Responding to family members: a bother or a benefit?

The HCPs agreed that family members play an important role both during the patients' ED stay and after their discharge. Family members were described to help with providing important information, understanding discharge information and preventing re-admission. However, it was also perceived in some cases as time-consuming.

Providing important information

It was argued that family members often have a lot of information about the patient and are usually not in the same mental level of distress as the patients. They often help physicians clarify symptoms and find an accurate diagnosis.

'Family members play a pivotal role because often, it is conversations with them that help us diagnose the patients accurately or even avoid unnecessary examinations' (physician, focus group 3).

Helping understand discharge information

Due to many encounters and the vast volume of information in the ED, the HCPs indicated that family members and patients might have difficulty remembering information given orally. Therefore, the use of written material concerning the treatment plan was suggested as part of the discharge conversation, even though it might be time-consuming. The HCPs believed this would support the inclusion of family members not present in the ED, as they would be able to read the discharge information and instructions as well.

'When patients are re-admitted, I realize how little they were able to remember from the discharge instructions. It would be relevant to have the information in writing instead. This could be a way to empower the family as one unit' (nurse, focus group 2).

The HCPs noted that patients who spend only short stays in the ED are often labelled as having 'uncomplicated' conditions. They are, therefore, at risk of getting insufficient attention concerning their need for discharge information. Insufficient discharge information makes it challenging for the family to support the patient and affects both the patient and the family negatively.

'Our core task is to maintain a high patient flow. In my experience, uncomplicated patients with low triage level and are able to self-care often suffer from that fact' (physician, focus group 3).

The HCPs suggested a discharge coordinator (technical or personal) in the ED to prevent fractional discharge information from being provided to patients, whether they have complex care issues or uncomplicated needs.

Preventing re-admissions

The HCPs noted that not involving family members could increase the risk of re-admission.

'Involving the family might prevent re-admissions. We need to create a space for all voices to be heard. We need to take care of potential risks of re-admission, such as lack of pain control' (nurse, focus group 1).

It was discussed that family members often play a central role after discharge. Therefore, there was a need to empower them to handle the care and treatment plan. This empowerment was seen as essential because otherwise, family members might not feel confident in helping the patient manage possible recurring symptoms appropriately and may eventually urge them to call an ambulance.

'We need to make sure the family members are able to handle the situation after discharge… Do they have the physical or/and cognitive resources to help the patient appropriately or do we need to do something, such as contact the primary home care for assistance? That we can only find out if we involve the family' (nurse, focus group 1).

Being time-consuming

Even though the HCPs found the involvement of the patient and their family members beneficial, it was discussed as problematic, especially in busy periods. In such instances, the HCPs mentioned the necessity of prioritizing the patients and commencing the treatment to prevent overcrowding in the ED. Due to the short period of time that patients spend in the ED, many family members are not able to visit the department before patient discharge. Disagreements arose in the groups on whether involving family members needed to be prioritized or not.

'I do not prioritize calling the family if the department is busy. This must be done by the patient. However, I am aware that it can be difficult for the patient to know the

answers to all the questions raised by the family, which might affect whether the family member feels confident or not' (nurse, focus group 2).

Working as an interdisciplinary team

In all groups, the benefits of working as an interdisciplinary team were discussed, and suggestions towards its organization were postulated.

Benefits of a close teamwork

The HCPs found it challenging to assemble all the information and knowledge regarding care, treatment and family. Subsequently, patient discharge conversations would often become fragmented and confusing for the patients and their families.

'Currently, we cannot ensure that everything is covered. We do what is expected from our point of view and send them home. I believe this may, in some cases, cause insecurity and distrust' (nurse, focus group 3).

They also found it difficult to identify possible obstacles to the patients adhering to the discharge plan or to detect how the patients would cope with their health situation in general. Interdisciplinary teamwork was presumed to have a positive effect on how the HCPs managed to accommodate patients' and family members' needs towards discharge.

'To help our patients, we need short multi-disciplinary "brush ups". That way, the staff are kept on the right track because relevant information could be shared' (nurse, focus group 3).

In EDs, there is no tradition for interdisciplinary teamwork apart from the trauma rooms. The specific requirements to benefit from this collaborative approach were identified as follows: level of information and communication, involvement of social networks and collaboration with community nurses. This would ensure a discharge plan that accommodates patients' mental and psychological abilities, so they can manage as intended.

'We have talked about reorganizing the workflow many times, but we found no optimal solutions. However, we have discussed all the benefits regarding improved collaboration' (nurse, focus group 3).

Suggestions towards improved teamwork

Suggestions regarding a joint discharge conversation protected from disruptions involving nurses, physicians and family members were initiated. A discharge conversation was viewed as a possible way to make a precise update on the plan, thus promoting collaboration with the community or family members not physically present in the ED. Notably, the HCPs also discussed the obstacles in having to wait for each other to enter a discharge conversation as a team. This approach could be a form in which information is given as a whole and not in fractional form.

'If we all were gathered at the time of discharge, we would be able to summarize the treatment plan and care issues, but it could be difficult as it would affect the workflow' (physician, focus group 3).

The HCPs are aware that patients discharged after a few hours in the ED have potentially both given and received lots of information that could be difficult to understand and inconsistent in their stressed state of mind.

'By the time of discharge, patients should have information in writing because they may not be able to remember much after returning to their homes, considering their stressed state of mind. Currently, this is not implemented, but it may be relevant in the future' (nurse, focus group 3).

Health technical solutions were suggested as the 'discharge facilitator'. The technical solution should convey continuous and consistent information for patients and their family members during their stay in the ED. Likewise, the solution should enable the patient and family members to revisit the information at home and allow the HCPs to get a view of the patients' course of treatment in the ED.

'If we had a system that facilitated the progress of ED activities and were available for the patients as well, the HCPs would be able to get a fast brush up on the next steps. It would increase the quality of the health-related discharge information we provide' (nurse, focus group 1).

DISCUSSION

Stronger interdisciplinary collaboration might improve patient pathways in the ED

Our findings highlighted that the ED organizational structure often provides short and fragmented encounters among HCPs, patients and family members due to a busy environment. This appears to be out of step with what the HCPs highlighted to be important from a person- and family-centred perspective where a trustful relationship should be the focus. A gap is present between what HCPs are 'forced' to handle to avoid situations with overcrowding and what they actually value and want to improve. This study identified that the HCPs stressed a need for patient flow in the ED and suggested a technical tool to improve engagement with patients and family members.

A Swedish qualitative study investigated the strategies used by HCPs in EDs and recommended that HCPs be given tools to handle hectic and stressful situations to enable quality care at all times regardless of the workload [5]. They highlighted a gap in the ED, where the HCPs are forced to contend with immense workloads and patient needs. Periods with high workloads create moral distress because time is spent on patient flow discussions rather than quality patient–HCP encounters. However, no specific tools were tested in the Swedish study [5].

Clear communication was highlighted as the optimum way to develop therapeutic relationships with patients in the initial ED assessment in our study. Communication was also underlined as important to accommodate from the patient and family perspectives [10]. Clear HCP communication helped reduce patient burden, develop trust and increase reassurance [10]. Different models of communication strategies have been tested in support of creating improved discharge information [35, 36]. In addition, the Calgary Cambridge model showed high reliability in a person-centred communicative approach [37]. To meet patient and family needs in brief ED encounters, HCPs may find the 15-minute family interview framework useful, as it creates a clear structure for the conversation [38].

The HCPs in our study argued that they were trained in a task-focused culture and a life-saving technical approach more than a person-centred approach. The Swedish study [5] also found that the HCPs possessed two strategies: a proactive strategy focusing on flow and a reactive strategy with the values of delivering person-centred communication [5]. Patients and families express that if HCPs do not provide person-centred communication, it causes feelings of being 'just another patient in a line', leading to insecurity, distrust and fear [10]. A prospective cohort study conducted by Body et al. [39] found that HCPs in EDs are required to not only focus on physical symptoms and medications but also on easing suffering [39]. This includes managing emotional distress and developing therapeutic partnerships and tailored information in preparation for discharge [39].

The HCPs in our study identified the need to balance an organizational structure that demands high patient flow with their awareness of the needs of patients and family members for trustful encounters and tailored information. To enable a balance of patient flow and person-and family-centred care, the HCPs recommended improved interdisciplinary teamwork. An organizational culture of interdisciplinary teamwork has been shown to enable mentoring and development of HCPs to achieve accurate and timely assessment and the delivery of person- and family-centred care [5]. Interdisciplinary teamwork was found to prevent misunderstandings and inconsistencies in the information given [5]. These findings are echoed by Von Knorring et al. [40], who found that 36% of ED patients experienced inconsistency of information [40]. Inconsistency was found to be a result of a lack of teamwork, and future research focusing on the impact of different types of teamwork was suggested [40].

The HCPs in our study proposed the development of an unspecified health technical solution providing both in-hospital and follow-up discharge information. The solution was suggested as an integrated tool in the interdisciplinary teamwork to empower the patients with continuous information and clarity in their course of treatment despite busy periods in the ED. In a Korean pilot study by Kim et al. [41], it was found that an application-based service of personal mobile health records provided with patient-centred medical information improved the self-management of patients' health conditions and experiences in the ED [41]. The system required multiple steps in which the patients downloaded an application to their personal mobile phones and created an account to share ED data on their private mobile phones [41]. Previous research on promoting person- and family-centred outcomes has highlighted that patients' personal characteristics and preferences for information, as well as their specific disease, are influencing factors, but the impact of the environment is often overlooked when seeking solutions [42, 43]. The involvement of consumers as end-users in developing a technological solution to cover identified needs helps towards creating solutions to improve clinical practice [44, 45]. However, barriers in the existing culture and its readiness to change must be identified to avoid resistance to change [46].

Can family involvement and ED care be matched?

In our study, the HCPs positively associated family involvement with improved care in the ED. Family support and understanding of the treatment and discharge plans were found to influence revisits to the ED. In a previous research, ED nurses found that working with families is either a bother or a benefit depending on whether the family members understand the healthcare system [14, 47]. Furthermore, the HCPs discussed whether they were obligated to involve family members. The culture and attitudes influence how HCPs engage with families, and HCP training in communication skills is required to improve their relationship with families [16]. Based on our findings, future studies focusing on designing person- and family-centred strategies and how they can improve ED care are warranted. Our study suggests that it might be beneficial to apply technical solutions to integrate tailored information and therapeutic communication to reduce the existing gap between person-related needs and organizational needs of productivity and high patient flow.

Limitations

This was a national study, limited by the fact that the Danish healthcare system is organized differently compared with that of other countries. Data were collected using qualitative methods, whereas a broader perspective could have been obtained through surveys. Due to their busy schedules, only two physicians were able to participate in the focus groups. Collecting data from the groups was difficult because they were either too homogenous, suffering from an absence of interaction or too heterogeneous with the risk of larger disagreements [26]. The managers of the EDs participated in forming the groups to achieve the best balance among the HCPs.

CONCLUSION

There is a gap between ED HCPs' perception of the needs of patients and family members and what is actually being delivered during short stays in the ED. The findings indicate that interdisciplinary teamwork could be the key to ensuring the development of customized patient- and family-centred information dissemination and goals within the ED. In the future, using technology to enable the delivery of tailored information to support person- and family-centred informative approaches during and after ED treatment should be considered. Technology enables patients and family members to revisit the information at home and the HCPs to view the patients' courses of treatment.

Table Legend:

Table 1: Participants' demographic data

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Supplementary file: None.

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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?	
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	
Occupation	3	What was their occupation at the time of the study?	
Gender	4	Was the researcher male or female?	
Experience and training	5	What experience or training did the researcher have?	
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	
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	
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	
Sample size	12	How many participants were in the study?	
Non-participation	13	How many people refused to participate or dropped out? Reasons?	
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	
Field notes	20	Were field notes made during and/or after the inter view or focus group?	
Duration	21	What was the duration of the inter views or focus group?	
Data saturation	22	Was data saturation discussed?	
Transcripts returned	23	Were transcripts returned to participants for comment and/or	

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?	
Description of the coding tree	25	Did authors provide a description of the coding tree?	
Derivation of themes	26	Were themes identified in advance or derived from the data?	
Software	27	What software, if applicable, was used to manage the data?	
Participant checking	28	Did participants provide feedback on the findings?	
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	
Data and findings consistent	30	Was there consistency between the data presented and the findings?	
Clarity of major themes	31	Were major themes clearly presented in the findings?	
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	

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.