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BEING SECURE IN INSECURITY

- aspects of caring in the ambulance service.

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ABSTRACT

Ambulance care focuses foremost on medical care and treatment. On the one hand the ambulance service encounters persons suffering acute and severe physical illness or injuries; conversely ambulance patients are described, as being vulnerable to more than just their illness or injury. Ambulance care is provided in an insecure environment and ambulance clinicians have to be prepared for the unexpected. The overall aim of this thesis was to gain understandings of relationships and knowledge in caring, within the ambulance service.

Four studies have formed the foundation of this thesis. Three different methods were used; phenomenological hermeneutics (I-II) with individual interviews, qualitative content analysis (III) with focus group conversations and finally a Delphi method (IV). Study I aimed to elucidate the meaning of the relationship with ambulance clinicians as experienced by patients. This was to surrender in dependence of another, being secure in the hands of the ambulance clinician. The situation developed from being lonely before the arrival of the ambulance, to being cared for by the ambulance clinicians and finally being lonely again when transferred to the Emergency Department. Study II aimed to elucidate the meaning of the relationship with the ambulance clinician as experienced by significant others. This was to be lonely together and secure while sharing their lonely struggle for the affected person with the ambulance clinician. At the same time the ambulance clinician's focus was on the affected person leaving the significant others deserted and lonely. Study III aimed to elucidate ambulance clinicians' experiences of relationships with patients and significant others. This was encapsulated in the main category; 'To be personal in a professional role'. Being both personal and professional were found to be intertwined aspects of the relationship. The ambulance clinicians focus on the patient and are involved in creating comfort, having a professional mission to handle their own and the patient's safety as a priority of the care. Study IV aimed to identify and estimate desired knowledge among Swedish ambulance clinicians from the perspective of ambulance care managers. This embraced a wide spectrum, including both medical and caring knowledge. The highest ranked desirable knowledge areas were; 'Knowledge to assess the patient's situation from a holistic perspective', 'Medical knowledge to assess and care for different diseases' and 'Knowledge to be able to care for critically ill patients'.

In conclusion, the thesis unfolds a complex understanding of caring in the ambulance service, being secure in insecurity. The patients and significant others are secure in the ambulance clinicians' presence, but insecure when lonely and powerless. Caring in the ambulance service focuses on the physical disorder, but is understood from the body's inseparable connection to the lifeworld. Care is fixed in time and often short. The ambulance clinicians have to care for patients and significant others while simultaneously handling an insecure environment. This calls for ambulance clinicians to adopt a holistic approach to care for both patients and significant others, and to acknowledge the whole person.

LIST OF PUBLICATIONS

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1 INTRODUCTION

My interest in ambulance care started in the 1990s while having the opportunity to follow an ambulance crew on several shifts as part of my compulsory civilian service. This resulted in me attending nursing school. During my nursing education I started to work part-time as an Emergency Medical Technician and after my exam I was offered employment within the ambulance service. During my training I was introduced to caring science as an academic discipline. This was an eye-opener for me, and developed my knowledge of the interpersonal aspects of nursing care. As an ambulance nurse my interest was focused foremost on acute medical treatment, but my perspective changed dramatically in an encounter with an old man. He was very weak from years of alcohol abuse but in no direct need of acute medical treatment and was living in a miserable environment. What could I offer him and how could I care for him? Our encounter lasted approximately one hour during which I continuously stroked his head. When we arrived at the Emergency Department he turned to me and said, “ You are my brother”. After a moment of thought I responded, “Yes, I am”. He continued, “No-one has ever touched me in my whole life”. I was struck by his words and started to reflect upon my professional role. Is ambulance care more than just acute medical treatment? How can we better understand the caring aspects of this care?

A process started within me and I came to realize that those caring aspects of ambulance care had to be explored. This realisation became even more evident when one of my old colleagues once told me, “When I started work in ambulance care in the late 60s we provided the same amount of care that we do today, the difference is that then we had no equipment”. What does caring in the ambulance context mean? What is the meaning of entering into a relationship with a person in need of ambulance care? At the same time my clinical experience told me that this presented a challenge within the ambulance care context and that the knowledge base in this area had to be deepened.

2 BACKGROUND

This thesis focuses on the aspects of caring in the ambulance service from a lifeworld perspective on caring science. Thus, this background highlights specifically care in the ambulance environment and how it corresponds to vulnerable persons' needs.

2.1 THE SWEDISH AMBULANCE SERVICE

The ambulance service as an organisation provides advanced medical care to out-of-hospital patients (Edwards, Bassett, Sinden, & Fothergill, 2014; O'Hara, Johnson, Hirst, et al., 2014). In Sweden the county councils are responsible for planning and organising the ambulance service, and for ensuring that ambulance clinicians have the competence and knowledge to provide advanced emergency ambulance care (SOSFS, 2009:10). Ambulance care in this thesis is understood as defined by the National Board of Health and Welfare; the care provided by a team of ambulance clinicians, in or in direct connection to an ambulance vehicle. In Stockholm the ambulance service was introduced during the 19th century and managed then by the fire department (Eriksson, 1992). Care was foremost for patients with infectious diseases such as cholera and diphtheria. At that time ambulances were sparsely equipped and clinicians had no formal education. However, patients' testimonies from that time describe the ambulance clinicians' care as important and one patient wrote; *"I was put into a bed and with their big sunburnt hands they tenderly covered me with sheets and blankets/.../Their thoughts were foremost about the sick person, who was feverish and naked."* (Eriksson, 1992 p.73) Today within the ambulance service well trained ambulance clinicians provide advanced care to patients (Suserud, 2005). Ambulance care is usually administered outside the hospital or other formal healthcare institutions (Campeau, 2008), e.g. in the patient's home or in public places, for patients of all ages, from caring for children (Houston & Pearson, 2010) to dealing with multimorbidity in older persons (Vicente et al., 2012). To assess the need for ambulance care the emergency medical dispatch centres uses three priority levels: Priority 1, acute life-threatening conditions or accidents, Priority 2, acute but not life-threatening, Priority 3, other conditions requiring advanced care where it is judged that a longer response time will not negatively influence the patient's condition (SOSFS 2009:10). In 2013 emergency medical dispatch centres assessed approximately 1.4 million ambulance calls in Sweden. Those ambulance calls comprised; 37% Priority 1, 44% Priority 2, 11% Priority 3 with 8% of cases assessed as not in need of transport by ambulance (Wahlberg & Gustafson, 2015). Over recent years ambulance care call-out has increased in Sweden, which is thought to be the result of an increasingly older population and an increased use of the ambulance service instead of other health care organisations (Swedish National Audit Office, 2012). One should also remember that the ambulance service is also deals with calls that do not always involve conveyance to hospital (Rantala, Ekwall, & Forsberg, 2015).

2.2 BEING IN NEED OF AMBULANCE CARE

Toloo et al. (2013) show that calling for an ambulance is connected to an urgent and severe medical need for advanced care. An illness may be perceived as life-threatening, involving fear of both the known and unknown, and insecurity about the illness and what it might lead to (Travelbee, 2002). Hence, perceived suffering has different perspectives related to the physical illness, feeling a need of care from others in a whole life context (Eriksson, 1994). Thus, patients in ambulance care are described as being vulnerable (*c.f.* Tadros et al., 2012; Vicente et al., 2012). One aspect of this vulnerability relates to severely ill ambulance patients, who initially experience their symptoms as diffuse, feeling insecure and uncertain as to whether or not they should call for an ambulance (Isaksson, Brulin, Eliasson, Näslund, & Zingmark, 2011). Vulnerability is also related to the ambulance care environment which is experienced by patients as uncomfortable (Alex, Karlsson, & Saveman, 2013; Doohan & Saveman, 2015). In addition, from a whole life perspective ambulance patients see themselves as vulnerable when being subjected to a life situation that demands acute ambulance care (Bremer et al., 2009b), and feeling insecure when not knowing what is wrong (Rantala et al., 2015). Thus, caring corresponds to the patient's whole life and a striving for improved health, which is not necessary in the absence of illness (Dahlberg & Segesten, 2011). Thus, ambulance patients' needs are understood as being multi-faceted and founded on urgent and severe physical needs.

To respond to those physical needs the ambulance service is organised with a focus on the medical assessment and treatment, described as an obstacle to fully assessing the individual and the illness (Wireklint Sundström & Dahlberg, 2012). Protocols are commonly used for medical assessment and treatment of trauma patients (Prehospital Trauma Life Support Committee, 2003) and patients with acute medical diseases (Dalton, Limmer, Mistovich, & Werman, 2007). Thereto, the ambulance care service uses different triage systems to early identify and triage critically ill patients (*e.g.* Widgren & Jourak, 2011). However, when stepping out of their strict professional roles, which are governed by relatively limited procedures, ambulance clinicians have been found to have a positive effect on the care of their patients (Nordby & Nøhr, 2008). Hence, assessment in ambulance care also involves concerns not included in objective protocols (Wireklint Sundström & Dahlberg, 2011). Protocols are meant to ensure medical security and lower the mortality of critically ill persons (Widgren & Jourak, 2011), but do not embrace the patient's whole lifeworld (Galvin & Todres, 2009). At the same time ambulance clinicians consider a too literal adherence to guidelines as a threat to their creative thinking (Hagiwara, Suserud, Jonsson, & Henricson, 2013). Hence, a challenge in the ambulance service emerges, requiring concern for the caring aspects in addition to just medical assessment and treatment. Ambulance nurses experience that their responsibility is foremost to provide care with a medical focus, but that the care emerges from a unique encounter with the person at hand (Holmberg and Fagerberg, 2010).

Being able to understand the needs of the patient and to properly care for those needs, calls for a specific range of knowledge (Mayerhoff, 1990). Developing the ambulance clinician's knowledge could be a part of the ambulance care manager's responsibility geared to the organisation's objective (Yukl, 2013). Hence, creating a knowledge-sharing culture has been found to enhance the outcomes of nursing practice (Lee, Kim, & Kim, 2014). In addition, developing ambulance clinicians' knowledge in caring is also a training requirement. The curriculums for the education of specialist nurses in ambulance care concentrates foremost on medical care and contextual knowledge, and less on nursing care knowledge, such as nurse-patient relationships, communication and ethics (Sjölin, Lindström, Hult, Ringsted, & Kurland, 2015). However, knowledge is also understood as belonging to one's own experiences of being touched in relationships with patients and/or significant others (Martinsen & Eriksson, 2009). Knowledge in caring can be understood as dependent on theoretical knowledge, technical knowledge and knowing how to respond to a unique situation (Ekebergh, 2015). This knowledge can be described as tacit (Polanyi, 1966), in contrast to the knowledge that is based on medical evidence. Knowledge in ambulance care has been previously described as giving the ability to implement medical evidence within clinical care, in order to increase the quality of medical treatment (Cone, 2007; Jensen, Petrie, & Travers, 2009). However, this general knowledge is understood to be distanced from patients' and ambulance clinicians' lived experiences (Ekebergh, 2015).

Caring in nursing practice is a context-specific interpersonal process characterised as expert nursing practice, interpersonal sensitivity and intimate relationships (Finfgeld-Connett, 2008). This can be understood as preceded by the encountered person's physical, psychosocial and/or existential/spiritual needs, striving towards his/her well-being. One obstacle might be that the professional care provided by the ambulance service, is not fully recognised or understood by patients (Brown et al., 2009). On the other hand the source of caring belongs to a shared humanity, not necessarily connected to a fixed profession, but with the aim of preserving a person's dignity, absolute value as a human being and right to self-determination (Rundqvist, Sivonen, & Delmar, 2011). Ambulance clinicians are described as being friendly, concerned and continuously providing the patients with information (Halter, Marlow, Tye, & Ellison, 2006; Johansson et al., 2011), and paying attention to the patients' wishes and needs (Hadsund, Riiskjær, Skogstad, Riddervold, & Christensen, 2013). Ambulance patients exposed to severe physical trauma described their needs as both physical and existential, while striving to retain their identity (Elmqvist, Fridlund, & Ekebergh, 2008). All in all this provides an understanding of the relationship between the ambulance clinicians and the affected person, as the core of care (McCormack & McCance, 2010; Watson, 2008). In caring science the relationship is described as caring in itself while being able to listen to and share the patients' experiences (Eriksson, 1997; Watson, 2008), involving a recognition of the other, being available and present and as a mutuality (Gustafsson, Snellman, & Gustafsson, 2013; Holopainen, Kasén, & Nyström, 2014). Another aspect on the relationship is that it is an interactive process and a key to finding the formulas for care that are established between people and nurses (Granados Gámez, 2009; Peplau, 1991). Taken together

relationships with patients and significant others are understood as an essential part of the care provided by the ambulance clinicians.

This highlights the ambulance service as related to the care of the significant others, an area in which there has been limited researched to date. Ambulances are often summoned by patients or significant others (Benger & Jones, 2008; Brown et al., 2009). On the one hand significant others might be understood as experiencing personal suffering as result of a traumatic situation (Bremer, Dahlberg and Sandman, 2009a). On the other hand significant others are described as important in the initial assessment of the patient's symptoms (Tedim Cruz, Araújo, Alves, Magano, & Coutinho, 2012), being both aids and obstacles to the ambulance clinicians' decision-making and care (Gunnarsson & Warrén Stomberg, 2009; Larsson & Engström, 2013; Sandman & Nordmark, 2006). Hence, taking care of significant others is described by ambulance clinicians as difficult when providing care to a critically ill person, but nevertheless important (Larsson & Engström, 2013). In settings such as the Emergency Department, significant others have been disregarded by professionals with concern not being shown for the their specific needs (Andersson, Borglin, Sjöström-Strand, & Willman, 2013). On the other hand significant others attending Emergency Departments are found willing to be present, even in the care of affected persons with life-threatening conditions (Ersoy et al., 2009), involving an interaction with the affected person by touch, talk and intimacy (Redley, Beanland, & Botti, 2003). Ambulance clinicians describe their care of significant others as important in cases of out-of-hospital cardiac arrest (Bremer, Dahlberg, & Sandman, 2012). However, this care was not well structured, requiring unique responses in unique situations, resulting sometimes in failing to prioritize the significant others' needs when being responsible for both the patient and the family.

2.3 THE AMBULANCE CARE ENVIRONMENT

Ambulance care is described as being provided outside any formal institution and in *“a context rife with chaotic, dangerous, and often uncontrollable elements with which hospital-based practitioners need not contend”* (Nelson, 1997 p.162). The ambulance care environment is described as being unsafe for ambulance clinicians when they are exposed to violence and threats (Petzäll, Tällberg, Lundin, & Suserud, 2011) and when providing care in ambulances travelling at high speeds, and risking serious injury (Slattery & Silver, 2009). Thereto, in the ambulance vehicle there is only limited space and the way the ambulance is driven has an impact on the care of the patient (Suserud, Jonsson, Johansson, & Petzäll, 2013). Communication problems within the ambulance due to loud sounds from the vehicle may also occur (Greenwood & Heninger, 2010). In order to manage these issues within the ambulance care context safety training has been found to enhance the ambulance clinicians compliance with safety procedures (Eliseo et al., 2012) and the way they manage their own safety while being exposed to dangerous situations (Jones, Kue, Mitchell, Eblan, & Dyer, 2014). This can be understood as the ambulance environment requiring ambulance clinicians to be prepared for something they cannot fully be prepared for (Wireklint Sundström &

Dahlberg, 2012), in what Campeau (2008) has described as a non pre-determined working area. In collaboration with the ambulance team or other professionals the ambulance clinicians have to ensure the ability to provide care within this context. However, the ambulance clinicians' assessments is also dependent on the patient's trust and the patient's picture of what has happened, their experiences of health, illness and their medical condition (Wireklint Sundström & Dahlberg, 2011). Thereto, the situation can quickly change, demanding that ambulance clinicians are flexible and immediately able to change their initial approach. The care provided in the ambulance is described as short in terms of time (Poljak, Tveith, & Ragneskog, 2006) and as the first link in the overall chain of care (Brown & Bleetman, 2006).

2.4 BEING AN AMBULANCE CLINICIAN

Internationally ambulance clinicians commonly have professions such as a Paramedic or an Emergency Medical Technician. In the USA the role of an ambulance clinician is an in-the-field assistant to the physician at the hospital (Nelson, 1997). This requires the ability to assess severe illnesses and traumas using protocols and standing orders, to be creative and to make decision in chaotic, dangerous and often uncontrollable environments (Whetzel & Wagner, 2008). In Sweden an ambulance vehicle has to be manned by at least one Registered Nurse (Suserud, 2005). Usually, the ambulance team consists of two ambulance clinicians, as a team of two Registered Nurses or one Registered Nurse and one Emergency Medical Technician (with a different level of training). The Registered Nurse in ambulance care is a profession that has developed over the last few decades (Suserud, 2005), requiring the ability to work independently and provide care for patients both in emergencies and in less serious situations. Registered Nurses' competence is described as embracing the holistic aspects of care (The National Board of Health and Wealthfare, 2005). However, the Registered Nurse also has to have the skills to care for the patient's physical, psychiatric, social, cultural and spiritual needs and to lead and organise the care team around the patient. The competencies for Registered Nurses in ambulance care embrace leadership, interpersonal communication, institutional collaboration, pedagogic skills, possession of relevant knowledge, professional judgement, professional skills, research activities and technical skills (Wihlborg, Edgren, Johansson & Sivberg, 2014). Registered Nurses are judged to contribute to the more qualitative assessment of older peoples' multiple needs within ambulance care (Melby & Ryan, 2005) and provide care from a holistic perspective (Bruce & Suserud, 2003; Holmberg & Fagerberg, 2010). However, when nurses qualify for the Swedish ambulance care service the Emergency Medical Technicians are not allowed total autonomy to care for patients (Suserud, 2005), their foremost responsibilities being technical procedures for equipment and radio and data communication. However, a fully effective team of ambulance clinicians is described as essential for assessment and care of patients in the ambulance service (Abelsson & Lindwall, 2012; Gunnarsson & Warrén Stomberg, 2009).

Ambulance clinicians are often described as being exposed to emotionally demanding and stressful caring situations. Van der Ploeg and Kleber (2003) found that the

emotional demands on ambulance clinicians were significantly higher than for a reference group of other health care personnel. Thereto, studies report that stress symptoms for ambulance clinicians are linked to an inability to cope with daily stress and traumatic situations (Donnelly, 2012; Jonsson, Segesten, & Mattsson, 2003). Being worried when lacking confidence in one's colleagues and at the same time trying to control the environment also presented challenges for ambulance clinicians (Svensson & Fridlund, 2008). The specific situation of caring for critically ill children was also found to contribute to stress, together with the fear of failing in the overall responsibility of care (Nordén, Hult, & Engström, 2014; Svensson & Fridlund, 2008), and many situations often creating conflict involving medical safety, emotional wellbeing and traffic safety (Öberg, Vicente, & Wahlberg, 2014). Furthermore, feeling vulnerable and stressed was also common among ambulance clinicians in non-emergency situations, such as caring for patients with prolonged cancer (Nordby & Nøhr, 2011).

2.5 THEORETICAL FRAMEWORK

In this thesis caring is understood from a lifeworld perspective focusing on existential issues concerning the patient's world and on illness and vulnerability in relation to a person's lifeworld and existence (Hörberg, Ozolins, & Ekebergh, 2011). Thus, this can be understood as a holistic and non-dualistic view on caring. In order to understand caring from a lifeworld perspective an explanation of the following five concepts will be useful (Galvin & Todres, 2013); (1) *Temporality* refers to continuities and discontinuities of time as lived. Time is not only objective and quantitative but also experienced in its connection to the whole of life. (2) *Spatiality* as a concept of space and things surrounding us that are a part of our lifeworld. (3) *Intersubjectivity*, as our subjective lifeworld in relation to others in a social world. (4) *Embodiment* refers to our body as a lived body, simultaneously a subject and an object. The lived body is our connection with the surrounding world. (5) *Mood or emotional attunement*, as a perceptual and interactive understanding of how we find ourselves in the world.

Phenomenology suggests that we as humans are parts of the same world that we encounter, and that we in this world share each other's lifeworlds (Husserl, 2004). When considering this in relation to caring, an understanding of caring from the lifeworld of the unique human being appears (Galvin & Todres, 2013). This uniqueness can never be reduced to a list of objective attributes or characteristics, because we are more than the sum of our parts. Hence, this contrasts with the traditional biomedical model that emphasises the person and the body as passively subjected to internal or external forces. Merleau-Ponty (1997) suggests that the body has an important role in our lifeworld. Our body is an object that can and cannot be explored and we encounter the world through our body. Thus, the body has both a subjective and objective meaning. From this we can understand the human being as body, soul and spirit in an intertwined connection (Eriksson, 1997). Thus, experiences of suffering and caring will be focusing on the body but simultaneously involves the other parts of the human being as well (Eriksson, 1994). Husserl (2004) suggests that we all encounter the world as

subjects and experience the world through ourselves. Hence, our being in the world that we experience is pre-reflective and pre-theoretical as an a priori natural aspect and we are unable to escape the fact that we ourselves are subjects in this world (Husserl, 2004). Thus, the subjective experience is natural and taken for granted. All in all, for the purpose of this thesis being in need of care is understood as being both affected by an illness and/or trauma and simultaneously subjectively experiencing the lifeworld.

3 RATIONALE

Previous research has shown that lifeworld-led caring is to holistically respond to the unique person, from a non-dualistic perspective. Caring is on the one hand understood as general, belonging to a shared humanity. On the other hand caring is described as a service provided by a specific profession, such as that of an ambulance clinician, requiring specific knowledge. At the same relationships are described as essential and the core in caring. Care in the ambulance service is described foremost as a medical service, commonly regulated by pre-formed protocols, responding to patients' acute physical needs. Ambulance care managers are responsible for the ambulance service's organisational objectives, such as creating a knowledge-sharing culture. Hence, the knowledge to understand and properly respond to the patient's need is a part of caring. In ambulance care knowledge has been found to refer to evidence based medical interventions and the specific ambulance care context. On the other hand this kind of knowledge can be understood as not taking the patient's lifeworld into account. Ambulance patients are described as vulnerable, and not only as a result of their physical illness/injury. At the same time the ambulance care is provided in a non-specific environment, away from a formal institution. Hence, ambulance clinicians have to adapt to unique, unknown, stressful and threatening situations at the same time that they administer care. They are therefore often faced with a dilemma when caring for patients or significant others, having to choose between competing priorities. All in all we need to better understand the range of knowledge that ambulance clinicians must have to perform their role effectively, the meaning of relationships and finally, how these aspects of caring play out in the ambulance care setting. How can we better understand caring in the ambulance care environment? There is a need for an expanded body of knowledge from a caring science perspective. This thesis therefore focuses on how caring can be understood in the ambulance service.

4 AIMS

The overall aim of this thesis was to gain understandings of relationships and knowledge in caring, within the ambulance service.

- I. The aim of the study was to elucidate the meaning of the relationship with the ambulance clinicians as experienced by patients.
- II. The aim of the study was to elucidate meanings of the relationship with the clinicians in the emergency ambulance care setting as experienced by the patients' significant others.
- III. The aim of the study was to elucidate ambulance clinicians' experiences of relationships with patients and significant others.
- IV. The aim of the study was to identify and estimate the desired knowledge among Swedish ambulance clinicians from the perspective of ambulance care managers.

The separate studies will be referred to by their Roman numerals throughout this thesis.

5 DESIGN AND METHODS

In order to gain deepened understandings of relationships and knowledge in caring within the ambulance care context, a design combining different qualitative and quantitative methods was chosen (Streubert & Carpenter, 2011). The studies (I-IV) had different aims, participants, data-collection and analytical methods (see Table 1). Three different methods were used in this thesis. Phenomenological hermeneutics (Lindseth & Norberg, 2004) was used to elucidate meanings of the relationship with ambulance clinicians from patients' and significant others' experiences (I-II). Qualitative content analysis (Elo & Kyngäs, 2008) was used to elucidate ambulance clinicians' experiences of the relationship with patients and significant others (III). Finally, a Delphi method (Keeney, Hasson, & McKenna, 2011) combining qualitative content analysis (Elo & Kyngäs, 2008) and descriptive statistics, was used to identify and estimate the knowledge desired of ambulance clinicians by managers (IV).

Table 1: Overview of studies I-IV

Study	Aim	Participants	Setting	Data collection	Analysis
I	To elucidate the meaning of the relationship with the ambulance clinicians as experienced by patients	20 ambulance patients between 25 and 88 years of age (mean=63 yrs.)	Urban and rural areas in eastern Sweden	Individual interviews	Phenomenological hermeneutics
II	To elucidate meanings of the relationship with the clinicians in the emergency ambulance care setting as experienced by the patients' significant others	9 significant others between 48 and 77 years of age (mean=64 yrs.)	Urban and rural areas in eastern Sweden	Individual interviews	Phenomenological hermeneutics
III	To elucidate ambulance clinicians' experiences of relationships with patients and significant others	18 ambulance clinicians	2 Swedish ambulance departments covering both urban and rural areas	Focus group conversations	Qualitative content analysis
IV	To identify and estimate the desired knowledge among Swedish ambulance clinicians from the perspective of ambulance care managers	36 ambulance care managers	Swedish ambulance departments covering both urban and rural areas	Web based questionnaires	A Delphi method combining a qualitative content analysis and descriptive statistics

5.1 PARTICIPANTS AND SETTINGS

5.1.1 Patients (I)

The patients (n=20) participating in the first study were recruited at a hospital in eastern Sweden, providing hospital care for an urban and rural population of approximately 180,000 persons. All patients had experienced ambulance care with subsequent hospitalized care on either a medical, surgical or orthopaedic ward, and therefore those with minor injuries or illness who were discharged immediately after care at the Emergency Department were excluded. The inclusion criteria were; to be over 18 years

of age, to have been conscious during ambulance care, and to be able to give informed consent. The patients were informed of the study and its aim by Registered Nurses on the wards, and were asked if they would give consent for me to contact them with information about the study. Those who gave their consent were contacted with written information by mail. After two weeks I telephoned the patients and asked whether they would consent to participate in the study. All patients were invited to ask any questions they had about the study. After ten interviews the variation of data was discussed. A decision to increase the number of participants was made and the procedure for recruiting participants was remodelled. The participants were thirteen men and seven women, between 25 to 88 years (mean=63) of age, living in both urban and rural areas. Some of the participants had earlier experiences (n=15) of ambulance care.

5.1.2 Significant others (II)

The significant others (n=9) were recruited at two hospitals in eastern Sweden covering a total population of approximately 220,000 persons, in both rural and urban areas. Patients on surgical, medical and orthopaedic wards were provided with information about the study by a Registered Nurse on the ward, and a reply form which they could complete to give consent for me to contact a significant other with information about the study. All the patients had been under ambulance care prior to being admitted to the ward. The inclusion criteria for significant others were; to be over 18 years of age, to have been present when the patient received ambulance care, to have the patient's written permission to participate and to be able to give informed consent. The patients themselves determined who was regarded as significant others and no further questions were asked about their relationship. All in all seventeen significant others were provided with information about the study and ten consented to participate. After the interviews it turned out that one participant had not been present when the patient was in need of ambulance care, and the interview was therefore excluded. Thus, in total nine significant others participated in the study, six women and three men. Their age varied between 48 and 77 years (mean=64).

5.1.3 Ambulance clinicians (III)

The ambulance clinicians (n=18) were recruited from two ambulance service departments in two different county council areas in Sweden, covering both rural and urban areas. The first ambulance service department (A) covered a population of approximately 130,000 persons, and the second (B) covered approximately 100,000 persons (see Table 2). Ambulance clinicians were defined as someone providing care to patients in an emergency ambulance, regardless of their formal education. The manager chose every third ambulance clinician from the staff list (Freeman, 2006), resulting in a total of 27 ambulance clinicians being provided with written information about the study. After approximately one week the ambulance clinicians were contacted by telephone. Twenty ambulance clinicians gave their consent to participate, six declined and with one telephone contact was not successful. The ambulance clinicians were divided into four focus groups, two at each ambulance department (Table 2). In the focus groups 18 ambulance clinicians participated, resulting in two focus groups with

five participants and two focus groups with four participants. The participants were Registered Nurses (n=15) and Emergency Medical Technicians (n=3), ranging from 31 to 62 years of age (mean=42) and with a range of ambulance care experience from less than one year to 41 years (mean=13).

Table 2: Focus groups

Focus group	1	2	3	4
Ambulance Service Department	A	B	B	A
Number of participants	5	4	5	4
Length of focus group conversation	72 min	56 min	73 min	67 min

5.1.4 Ambulance care managers (IV)

In total 36 managers participated in the study. Recruitment was conducted via county council and private ambulance company websites, with the ambition of including the total population of Swedish ambulance care managers. Every person listed as an ambulance care manager was chosen, embracing different levels in the organisation and both urban and rural regions. All managers received a personal e-mail with information about the aim and process of the study. In total 132 managers were invited to participate. Of those the majority did not respond to the email at all (n=92) and a minority declined participation (n=4). After two weeks a reminder e-mail was sent to those who had not answered. Finally, 36 managers agreed to participate in the study, and received the first questionnaire. In the first round 30 managers returned their answers, resulting in a response-rate of 83%. The 30 managers received the second questionnaire and 27 managers returned this questionnaire, resulting in a response-rate of 90% in the second round. The third questionnaire was sent to 27 managers and 24 managers returned this questionnaire, resulting in a response rate of 89% in the third round. The response rate for the managers who continued all three rounds was 67%. They covered both urban and rural areas and were slightly more men (58%) than women (42%). One of the managers was an Emergency Medical Technician and the rest were Registered Nurses. The age of the respondents in the final round was between 32-64 years (mean= 52 years) and their experience of being an ambulance care manager ranged from less than 1 year to 35 years (mean= 8 years). The respondents were responsible for different size staff groups, covering from 12 up to 300 ambulance clinicians (mean= 80).

5.2 DATA COLLECTION

5.2.1 Individual interviews (I, II)

5.2.1.1 Patients (I)

Data was sourced from interviews with patients (I) to elucidate their relationship with the ambulance clinicians. Individual interviews were judged to be compatible with the aim of studying the phenomenon from patients' individual subjective experiences. The interviews commenced with verbal information about the study; the fact that it was voluntary, the aim and the procedure for interview. The participants were invited to ask

questions and offered the chance to withdraw before the recording started. However, all patients agreed to be interviewed. Eighteen of the patients wanted the interviews to take place in their homes and two patients preferred the interview to take place at their place of work. The aim with the interviews was to stimulate the patients to narrate a situation when they needed ambulance care. Hence, the interviews were open-ended, without a rigid set of procedures or questions, and focused on the interaction between the interviewer and the participant (Kvale & Brinkmann, 2009). To stimulate the patient's narrative an opening question was posed; "Can you tell me about the occasion when you needed to call for an ambulance?" Then, if necessary, the interviews were guided by two questions; (1) "Can you tell me how the relationship between you and the ambulance clinicians began?" and (2) "Can you tell me about your experiences of how the relationship continued until the ambulance clinicians left you at the Emergency Department?" Follow-up questions, such as "You told me you felt safe, can you tell me more about that?", were posed in order to deepen the patient's narrative, and to remain open for and move closer towards the phenomenon (Dahlberg, Dahlberg, & Nyström, 2008). The interviews lasted between 17 and 76 minutes, were digitally sound-recorded and transcribed verbatim.

5.2.1.2 *Significant others (II)*

Individual interviews were judged to be compatible with the aim of elucidating meanings of the relationship with ambulance clinicians as experienced by significant others (II). The significant others were provided with both written and verbal information prior to the interviews. They were informed that participation was voluntary and that they could withdraw at any time without stating a reason. However, all agreed to participate. The significant others chose the time and place for the interview resulting in eight interviews at their homes and one at another location. The interviews started with an opening question; "Can you tell me about the occasion when your significant other needed an ambulance?" The interviews were additionally guided by two questions; (1) "Can you tell me how the relationship with the ambulance clinicians began?" and (2) "Can you tell me about your experience of your relationship with the ambulance clinicians until it ended?" In order to get the significant others to narrate further, follow-up questions were asked, such as "You told me that you felt lonely. Can you tell me more about that?" The interviews lasted between 26 and 74 minutes (mean=42 min), were digitally recorded and transcribed verbatim.

5.2.2 Focus group conversations (III)

Previous research has shown that it is essential that the ambulance team functions well together if effective care is to be provided in the ambulance. Thus, focus group conversations were used to generate data from ambulance clinicians' experiences. Prior to the focus group conversations the ambulance clinicians were provided with both written and verbal information, about the study and the fact that it was voluntary. Before recording the focus group conversations the ambulance clinicians were informed about the aim of the study, the topic of the focus groups conversation and were encouraged to briefly present themselves. The focus group conversations were

moderated in a co-operation between myself and one of my co-supervisors and were conducted with low-moderate involvement in order to stimulate the social interaction within the group (Morgan, 1997). The interaction within the group was supposed to generate data, even though the study did not focus on the interaction per se (Morgan, 2012). The focus group conversations were supported with a pre-decided opening question; "Can you narrate and give examples of how you establish the first contact with patients and significant others when on location at a call?" If necessary a guide concentrating on four question areas was used to keep the group focused on the topic of the study; 1) "Can you describe what a relationship with a patient means to you?" 2) "Can you describe what a relationship with a significant other means to you?" 3) "Can you describe the ambulance care context's impact on relationships with patients and significant others?" 4) "Can you tell us about a complicated/uncomplicated relationship with a patient and/or significant other?" The focus group conversations lasted between 56 and 73 minutes (mean= 67 min), were digitally recorded and transcribed verbatim.

5.2.3 Questionnaires (IV)

The aim of this study was to identify and estimate the knowledge desired by ambulance managers of their ambulance clinicians. To collect data three web-based questionnaires were developed using a web based software (SurveyMonkey®). Round 1: The participants were encouraged to answer questions related to demographic data and in their own words describe the knowledge desired of their ambulance clinicians. Round 2: The free text answer from the first round was analysed using an inductive content analysis (Elo & Kyngäs, 2008), and the 26 resulting sub-categories were brought together in a second questionnaire. In Round 2 questions were formulated from the sub-categories, accompanied by a seven-grade Likert scale in which the participants were encouraged to rate the importance of the different categories, ranging from 1 (not important) to 7 (very important). Round 3: In this round the respondents were encouraged to interdependently rank the ten sub-categories with the highest mean value from Round 2. The most important sub-category was ranked 1 and the least important ranked 10.

5.3 DATA ANALYSIS

5.3.1 Phenomenological hermeneutics (I, II)

5.3.1.1 *Theoretical underpinnings*

To generate knowledge about the relationship with the ambulance clinicians as experienced by patients (I) and significant others (II) a phenomenological hermeneutic method was chosen (Lindseth & Norberg, 2004). This method was inspired by the French philosopher Paul Ricoeur (1976) with the aim of understanding and interpreting lived experience, through the interpretation of texts. Ricoeur (1981) makes a dialectic differentiation between understanding and explanation, but describes them as having an intimate relationship. Explanation corresponds to the structural study of an object as a reality in itself; understanding is generated by a subjective interpretation. Hence, the world is something we experience and the objects do not exist in themselves but as

something that the subject is intentionally directed to (Husserl, 2004). To scientifically study phenomenon within this world is to understand them as events in the subject's lifeworld, not as events and objects as such, but how they are experienced (Dahlberg et al., 2008). Ricoeur (1991) suggests that Husserl's epoché intends to refer to a subject-object orientated understanding of the world while being separated from the pre-understanding. Hence, this requires an interpretation as a foundation for the understanding. A text is understood as a discourse fixed in writing, going beyond the author's intention (Ricoeur, 1981). Ricoeur (1976) suggests that the understanding of a text is a movement from what the text says towards what it speaks about, opening up the world in front of the text.

5.3.1.2 Analysis

The chosen phenomenological hermeneutical method is concerned with the analysis of texts as a lived experience fixed in writing (Lindseth & Norberg, 2004). The analysis commenced with reading and reflecting upon the transcribed text as a whole several times, in order to generate a naïve understanding. The naïve understanding was written down, and with that in mind the analysis continued with a structural analysis. Meaning units were extracted from the text. The meaning of every unit was condensed in order to make the meaning explicit, and to reduce the amount of text. Condensed meaning units expressing one overall meaning were merged into sub-themes, which were reflected upon in order to progress the process of abstraction. From this abstraction process themes and one main theme were formulated. Finally, the whole structural analysis was reflected upon and considered in order to validate the naïve understanding. All in all there was a movement between the parts and the whole, the structural analysis and the naïve understanding, as entering into the hermeneutic circle (Lindseth & Norberg, 2004). Once the structural analysis and the naïve understanding were judged to validate each other they were reflect upon together with theories and texts (Ricoeur, 1976). The final comprehensive understanding was anchored in philosophical and caring theories, contributing a scientific discussion and opening up the world in front of the text.

5.3.2 Qualitative content analysis (III & IV)

5.3.2.1 Background

A systematic reading of bodies of text, images and symbolic matters has been common since the 17th century (Krippendorff, 2013). Currently, content analysis is known as being quantitative or qualitative. From a qualitative approach the analysis is more than just counting words and/or phrases, involving a subjective interpretation taking into account meaning, intentions, consequences and context (Downe-Wamboldt, 1992). In nursing research qualitative content analysis is common, and has been subjected to discussion according to the level of subjective interpretation. Graneheim and Lundman (2004) suggest that the qualitative content analysis cannot be disengaged from a subjective interpretation. Elo and Kyngäs (2008) suggest that in order to gain knowledge on a topic where this has previously been lacking, an inductive approach is

recommended. A deductive approach is judged to be suitable when performing studies based on earlier knowledge or testing a former known theory.

5.3.2.2 *Analysis (III & IV)*

The data from study III was analysed using an inductive content analysis (Elo & Kyngäs, 2008), with the aim of elucidating ambulance clinicians' experiences of the relationship with patients and significant others. The focus group conversations were transcribed verbatim and the text (159 pages) was read several times in order to generate an understanding of the whole. Notes were made in the margins to begin structuring the content. From this meaning units were extracted from the text into a coding sheet. The study's research question guided the analyses for the choice of text, phrases and/or conversations in the transcribed text (Downe-Wamboldt, 1992). The chosen meaning units were condensed and coded. Further, the codes (n=413) were read carefully and reflected upon, in order to group them into sub-categories. Finally, nine sub-categories emerged and were brought together into three generic categories and one main category. A continuous movement between the formulated categories and the transcribed focus group conversation occurred when recording the results, in order to remain inductive in the analysis and the report.

Study IV was analysed in the first round using an inductive qualitative content analysis (Elo & Kyngäs, 2008). The written answers from the first round were read through in order to get a sense of the whole. Words and phrases in the answers were extracted with the study's aim in mind in order to code the content. The codes (n=205) were put in a code sheet in order to sort them into sub-categories and categories. Finally 26 sub-categories and 5 categories emerged. Those 26 sub-categories were put into a questionnaire and the participants were encouraged to rank the importance of every single sub-category as described under the Delphi method heading.

5.3.3 Delphi method (IV)

5.3.3.1 *Background and theoretical underpinnings*

The Delphi method originates historically with the Greeks (Keeney et al., 2011). In Greek mythology Delphi was an oracle that was consulted on different topics, including important matters of public policy, personal affairs, outcomes of wars and the founding of colonies. As a method it was developed in the late 1940s to combat shortcomings within forecasting of military operations. The method was aimed to reach consensus among a group of experts by using individual statistical predictors. However, there is no universal agreement as to whether the method belongs to a quantitative or a qualitative tradition (Keeney et al., 2011). Nevertheless, since development the method has been used in several different disciplines, including nursing research (e.g. Hoyt et al., 2010; Jirwe et al., 2009; O'Connell and Gardner, 2012). Although involving a group of experts in which the participants individually and anonymously contribute to the study, the risk of the impact of a dominant participant, as might occur in a face-to-face method, is judged to be reduced (Keeney et al., 2011). However, the design and

use of Delphi method is flexible. Thus the method might be modified in order to be pliable to the study's aim and research question (Keeney, Hasson, & McKenna, 2006).

5.3.3.2 Procedures and analysis

In Study IV a modified Delphi method in three rounds was used to identify and estimate the knowledge desired by managers of their ambulance clinicians. In the first round the managers' answers were analysed using an inductive content analysis (Elo & Kyngäs, 2008). Twenty-six sub-categories emerged from Round 1 and put into a questionnaire in Round 2. The respondents were encouraged to estimate the importance of every single sub-category using a seven-grade Likert scale ranging from 1 (not important) to 7 (very important). Further, in Round 3 the managers were encouraged to rank the ten sub-categories with highest mean value from Round 2, using 1 (highest ranking) to 10 (lowest ranking). To analyse the second and third round descriptive statistics were used. Ordinal data was received from the Likert scale (Round 2) and rating scale (Round 3). This data was analysed with a focus on mean values and standard deviation (Machin, Campbell, & Walters, 2007) in order to present the group's opinion and the variation within the group. The statistical analysis was performed using the Statistical Program for Social Sciences (SPSS® V 22.0).

5.4 ETHICAL CONSIDERATIONS

Studies I, II and III were regulated by Swedish law (SFS 2003:460) and therefore needed to be approved by the Regional Ethics Committee (Dnr: 2010/209-31/5). Study IV was not regulated by the law, but an advisory statement from the Regional Ethics Committee (Dnr: 2014/2088-31/5) was obtained.

Ethical consideration has been taken into account in line with the Declaration of Helsinki (World Medical Association, 2008). The participants were given verbal and written information prior to the individual interview, focus group conversations and questionnaires. Participation was voluntary and they could withdraw at any time without stating a reason. Written consent was collected for all studies. In Studies I, II and III the participants gave written consent before the interviews or focus group conversations. In Study IV the participants gave their consent in a responding email after getting information about the study. The digitally recorded interviews and focus group conversations were transcribed verbatim and coded for confidentiality. The questionnaires in Study IV were identified by the participants' email-addresses and when being analysed the email addresses were removed and the questionnaires coded. The code keys for all studies were locked in a secure cabinet. When reporting quotations from individual interviews and focus group conversations all personal information on specific participants was removed.

Ethical risks and benefits have been taken into account throughout the whole project. The patients and significant others (I-II) were interviewed at a location chosen by themselves, with the aim of putting them at ease in the interview situation. Ethical consideration was given to encouraging the patients to narrate dramatic life events

requiring ambulance care. This might have involved an ethical risk with the interview giving rise to thoughts and feelings (Patton, 2002). On reconsideration the ambulance care situations were judged to be emotionally stressful, and preparation was made for offering professional support after the interviews. However, no participant requested this support. All participating patients were very open in their narratives, sometimes being emotionally affected. When situations like those occurred, the patient was not forced to continue to speak but was given time to react before continuing the interview. Orb, Eisenhauer and Wynaden (2001) argue that the researcher has to judge the value of the data obtained from an emotionally demanding experience with the distress the interview might cause for the participant. The patients' and significant others' narratives were deemed to contribute valuable knowledge of being a patient or significant other in the ambulance care context. The short term benefit for the particular patients and significant others was judged to be minor, but in the long term the research may contribute to understanding relationships within this context as embracing complex and holistic aspects to the benefit of patients and significant others.

Risks for ambulance clinicians participating in the focus group conversations (III) might also occur, when in a group they recall experiences of relationship with patients and/or significant others. The participants could end up blaming or judging their own or others' behaviour while sharing their experiences in the group. This illuminates an essential understanding of focus group conversation, that to share meanings is not the same as agreeing with each other (Morgan, 2012). However, in the focus group situation this was a minor risk as within the groups the participants had fruitful and respectful conversations with each other. Another risk was that the ambulance clinicians could understand the interviews as a judgement of their qualifications as caregivers. However, several of the ambulance clinicians stated their appreciation after the focus group conversations of being able to talk about caring aspects, which they considered were not given so much focus in daily practice. This was interpreted as a short term benefit for the participants, decreasing the risk of negative experiences from the focus group conversations. In the long term this study could contribute knowledge important for developing ambulance care with the personal aspects of the care in mind, benefitting ambulance clinicians, patients and significant others.

In Study IV ambulance care managers were asked to complete three different questionnaires stating the knowledge they desired of their ambulance clinicians. Confidentiality is described as essential when participating in a Delphi study, and if possible the respondent's identities and individual responses should not be disclosed to other participants (Keeney et al., 2011). The use of individual questionnaires in the first round was to ensure confidentiality. The questionnaires were sent individually to the different managers, and they had no access to data on the other participants. On the other hand the total population of ambulance care managers in Sweden is small, engendering a risk that the participant could guess who the other participants were. Sharing others' perspectives on desired knowledge is both a risk and a benefit. Others' perspectives on desired knowledge might positively influence the individuals, having impact on how to manage one's own organisation. On the other hand they could end up

questioning their own leadership compared with that of others. The pursuit of true anonymity may be questioned in Delphi studies as the respondent will be known to the researcher (Hasson, Keeney, & McKenna, 2000). To ensure that the participants would not be known to anyone else and to maintain confidentiality, the participants' personal information was replaced by a code.

Taken together this thesis could have presented different ethical risks for the participants. However, ethical risks must be seen in the light of the possible benefits (Weed & McKeown, 2001). The positive outcomes of this thesis will be to increase the body of knowledge of caring, benefitting ambulance clinicians, improving ambulance care organisation, training and education, and above all supporting vulnerable patients in need of ambulance care.

6 FINDINGS

6.1 STUDY I

The relationship with the ambulance clinicians as experienced by patients was to surrender in the dependence of another. This represented a development from being lonely, vulnerable and exposed with fear and anxiety before the arrival of the ambulance, to being cared for by the ambulance clinicians. At the same time it was to rapidly return to loneliness again when abandoned by the ambulance clinicians at the Emergency Department. When in the hands of another they trusted the ambulance clinicians, becoming pliable to their commands. The patients are secure when the ambulance clinicians are present and responsible for a care they administer with competence, knowledge and professionalism. This caring presence is only temporary, alleviates comfort and instils hope of survival, but then ends abruptly. In this presence, they are important, being involved, informed and acknowledge as persons, and are also relieved from their physical suffering. At the same time they are safe in an emotional presence and a warm relaxing atmosphere that provides humour and empathy. When excessively cared for and not acknowledged they are powerless and insignificant. On the other hand they are involved in a relationship that is based on mutuality, friendship and intimacy. They are exposed to the ambulance clinicians' power but also relieved when able to hand over the responsibility. When the relationship ends they are once again insecure and return to a lonely struggle, despite being under the care of the Emergency Department.

6.2 STUDY II

The relationship with the ambulance clinicians as experienced by significant others is to be lonely together. The ambulance clinicians' presence turns their lonely struggle for the affected person into a shared struggle. Being in a lonely struggle before the relationship with the ambulance clinicians, is to have an overwhelming responsibility. This leaves them helpless and frightened that the affected person might die. In the relationship with the ambulance clinicians they are secure and relieved of their overwhelming responsibility and supported in their desire to help the affected person. They are informed about the affected person's condition and encouraged to contribute with information, thus becoming involved in the care process. They are also involved when perceiving the ambulance clinicians as equals and understanding their professional language. They have trust in the ambulance clinicians' knowledge when handing over responsibility for the affected person, and secure following the ambulance clinicians' decisions. This instils hope that the affected person will survive, creates stability and establishes control in a chaotic situation. On the other hand they are insecure because worries remain, especially when the ambulance clinicians seem uncertain of how to care for the affected person. When handing over responsibility to the ambulance clinicians the affected person becomes the prime focus. The significant others withdraw themselves in order not to negatively influence or delay the care, and

they become the secondary focus, being lonely, insecure, not involved in what is happening, not cared for or acknowledged.

6.3 STUDY III

The ambulance clinicians' experiences of the relationship with patients and significant others was encapsulated in the main category; '*To be personal in a professional role*'. Being personal and professional were intertwined and inseparable aspects of the relationships. By being personal the ambulance clinicians are emotionally affected in the relationships and are concerned with aspects than direct medical care. Their professional role was described as using their experience and knowledge in order to protect the patient, showing respect and being an authority.

The main category was founded on three generic categories;

(1) *To be there for the affected person* was to have the patient in focus and to defend his/her rights and integrity, and was experienced as challenging when in an environment with many other people present. The ambulance clinicians adopted a holistic approach towards the patient, trying not to let pre-formed assumptions negatively influence their care. They tried to get significant others to stand back, so as not to negatively interrupt the relationship with the patient. However, in certain situations the significant others were considered as affected persons, e.g. in situations involving sudden death.

(2) *To be personally involved* was described as perceiving the patient as a person and presenting themselves as fellow human beings, talking calmly and creating comfort for the patient. This was in order to portray themselves as proprietors of professional knowledge, as someone to trust. The ambulance clinicians involved themselves and their emotions in the relationship, e.g. while using humour as an act of togetherness. At the same time it was challenging to not let their emotions negatively impact the care they were administering. They collected information on their way to the patient, in order to tacitly learn about and get a picture of him/her. This was considered an important part of building the relationship.

(3) *To have a professional mission* was described as being an authority and being aware of and using one's power. The ambulance clinicians described the environment as insecure, involving threats from, for example drug-affected persons. The ambulance clinicians guarded their own and the patient's safety in an insecure environment, in order to be able to provide care for the patient. A well-organised team was considered important for good relationships with patients and significant others. They described those relationships as short but important for the patients' experience of care, and they involved the patient in a shared decision, making themselves pliable to the patient's wishes, but with a clear understanding of where they wanted the relationship to lead.

6.4 STUDY IV

The qualitative content analysis of the open-ended questionnaire in the first round exploring the knowledge desired by the ambulance care managers of their ambulance clinicians resulted in twenty-six sub-categories brought together into five categories (see Table 3).

Category 1: Knowledge to handle the specific ambulance care context embraced the ability to assess risks in dangerous environments, manage one's own security and to solve practical problems. The managers wanted the ambulance clinicians to have knowledge of the leadership and organisational aspects to be able to handle situations such as large accidents, to co-operate with other healthcare providers, and to handle radio-communication.

Category 2: Knowledge to assess and care for patients' medical needs was described as essential when prioritising the patients' urgent and non-urgent medical needs. The ambulance clinicians needed to know how to care for patients of all different ages, those in primary care and those with psychiatric disorders. Knowledge of medical drugs and equipment was also described as essential.

Category 3: Knowledge to holistically assess and care for patients in difficult situations involved supporting persons in a crisis, having a holistic perspective on the situation and keeping the patient in focus. Hence, knowledge of how to encounter, show empathy for and communicate with people was described as essential.

Category 4: Knowledge from formal education and experience embraced both Registered Nurses and Emergency Medical Technicians. The formal education embraced both basic and specialist education and covered foremost emergency in-hospital care experiences.

Category 5: Knowledge about the organisation was related to the ambulance clinicians' ability to be up to date with the organisation's development and to handle personnel administrative systems.

In the second round the managers decided values for every single sub-category. This resulted in mean values between $M=6.67$ (Knowledge in encountering persons) and $M=4.67$ (Knowledge of administration). There was a low variation between the managers' estimation as showed in the standard deviation, varying between $SD=0.55$ (Knowledge in encountering persons) and $SD=1.18$ (Knowledge of administration).

In the third and final round the managers interdependently ranked the ten sub-categories with the highest mean values from the second round, from 1 (most important) to 10 (least important). The ten ranked sub-categories from their mean ranking (MR) were:

1. Knowledge to assess the patient's situation from a holistic perspective (MR=3.42)
2. Medical knowledge to assess and care for different diseases (MR=3.71)
3. Knowledge to be able to care for critically ill patients (MR=4.13)
4. Knowledge to manage one's own safety (MR=5.17)
5. Knowledge of treatment guidelines and routines (MR=5.50)
6. Knowledge to drive the ambulance safely (MR=5.54)
7. Knowledge in encountering persons (MR=5.58)
8. Knowledge about medical drugs and their administration (MR=6.29)
9. Knowledge of triage and prioritization (MR=7.75)
10. Knowledge of geriatrics and multimorbidity in older persons (MR=7.92)

Table 3: The 5 categories and 26 sub-categories emerging from the qualitative analysis in the first round (IV).

Categories	Knowledge to handle the specific ambulance care context	Knowledge to assess and care for patients' medical needs	Knowledge to holistically assess and care for patients in difficult situations	Knowledge from formal education and experience	Knowledge about the organisation
Sub-categories	Knowledge to assess risks in a dangerous environment	Knowledge of geriatrics and multimorbidity in older persons	Knowledge to support persons in crisis	Knowledge acquired from formal education.	Knowledge of organisational development
	Knowledge to manage one's own safety	Knowledge of delivering babies and emergency care of children	Knowledge to assess the patient's situation from a holistic perspective	Experienced based knowledge from other healthcare areas	Knowledge of administration
	Knowledge of the work environment	Medical knowledge to assess and care for different diseases	Knowledge in encountering persons		
	Knowledge to solve practical problems	Knowledge about medical drugs and their administration	Knowledge in communication and interview technique		
	Knowledge to drive the ambulance safely	Knowledge about technical medical equipment			
	Knowledge about leading and managing large accidents	Knowledge to be able to care for critically ill patients			
	Knowledge for co-operating with other healthcare providers	Knowledge of treatment guidelines and routines			
	Knowledge of radio communication	Knowledge of triage and prioritization			
		Knowledge about primary care			
		Knowledge of psychiatry			

6.5 SHORT SYNTHESIS OF THE RESULTS

Caring in the ambulance service corresponds to the temporary relationship (I-III) with ambulance clinicians in a challenging environment (III), essential for the care administered and the well-being of patients and significant others (I-II). In the presence of the ambulance clinicians the patients are secure, but at the same time insecure when being dependent on another (I). This presence is an act of togetherness between the patient, the significant others and the ambulance clinicians. The present results unveil an understanding of the relationship as the arena where caring takes place, emerging from the unique person's needs (I-III). Being secure in this relationship is for patients and the significant others to trust the ambulance clinician's competence and knowledge (I-II). At the same time the patient's physical symptoms engender anxiousness (I) and the significant other fears that the affected person might die (II). The knowledge desired of ambulance clinicians is foremost to holistically assess the situation and encountering persons, but also medical care must be provided and the specific environment taken into account. (IV). The patients place themselves in the power of the ambulance clinicians (I) and the significant others withdraw themselves from the

ambulance clinicians' focus, becoming excluded, insecure and lonely (II). The patients and significant others are involved and acknowledged by the ambulance clinicians when provided with information (I-II). The ambulance clinicians involve themselves personally in the relationship, being emotionally affected but also present themselves as proprietors of professional knowledge (III). The ambulance care environment is described as insecure (III-IV). Managing one's own and others' security in insecure environments is described as a priority in the care of the patient (III) and as a knowledge desired by ambulance care managers (IV). When care takes place in public places and/or with many other people present the integrity of the patients is defended by the ambulance clinicians (III). Taken together the results provide an understanding of caring as being secure in insecurity, referring to the relationship and the ambulance clinicians' knowledge.

7 DISCUSSION

7.1 REFLECTIONS ON FINDINGS

From the findings in this thesis caring can be understood as being secure in insecurity. Caring in the ambulance service emerges from the patients' and significant others' needs in an insecure environment. In this insecure environment the ambulance clinicians have to create safe conditions for caring, conveying themselves as proprietors of professional knowledge and as someone to trust. In order to reflect upon those findings the following aspects on caring will be discussed below; 'Caring as balancing a complex whole', 'Caring as an act of togetherness', 'Caring as a being in time' and 'Caring as demanding knowledge'.

7.1.1 Caring as balancing a complex whole

The present thesis supports an understanding of caring in the ambulance service as complex. It is for the patients to be both involved and insignificant (I) and for the significant others to be both lonely and together (II). Thus caring is not understood as something static or objective but refers to the individual's experiences and the specific situation, which one cannot determine beforehand. This can be understood in the concept of spatiality in lifeworld-led caring (Galvin & Todres, 2013). Husserl (2004) suggests that the world, as we experience it, is always in a close relationship with ourselves as subjects. Hence, caring in this thesis can be understood as going beyond fixed medical diagnosis, to unfold the uniqueness of a person's experience of illness in relation to a complex world and the existential aspects of being human (Galvin & Todres, 2013). On the other hand, knowledge areas desired by ambulance care managers of their ambulance clinicians mainly relate to critical medical care (IV). This corresponds to ambulance care as concerned with urgent and severe physical needs, but also as an interruption in ordinary life (Bremer et al., 2009a; Isaksson et al., 2011; Johansson, Swahn, & Strömberg, 2007). Thus the acute illness is not a situation fixed in time with clear boundaries, but refers to the whole life (Husserl, 2004). The patients are lonely in this situation, before being cared for by the ambulance clinicians (I). The significant others have an overwhelming responsibility for the affected person before the relationship with the ambulance clinicians is initiated, being helpless and frightened (II). This corresponds to emotional attunement as perceptual and interactive and the intimate path to how we find ourselves (Galvin & Todres, 2013). On the other hand, because of their acute and severe bodily needs, the patients have no other option than to hand themselves over to the ambulance clinicians (I), being dependent. This is a moment of both suffering and a relief, when being secure in one's insecurity. This highlights a complexity within the relationship with ambulance clinicians, illuminating both a need of physical care but also a subjective existential suffering (Eriksson, 1994).

The ambulance clinicians are personal in a professional role (III), and holistic assessment and the ability to encounter people is desired of them by their managers

(IV). In order to deepen the understanding of this holistic aspect of caring in the ambulance service, a description of the close relationship between explanation and understanding will be used (Ricoeur, 1981). One can understand the patients and significant others as 'texts' that the ambulance clinicians have to read and understand, requiring an interpretation (Kasén & Sivonen, 2007). This is a process understood as a movement between the parts and the whole. The ambulance managers underscore holistic knowledge, but at the same time need knowledge of other areas in order to be able to explain, e.g. how patients react in a crisis and how to medically assess and care for different diseases (IV). This highlights a problem that caring for patients by following pre-formed general medical guidelines and protocols could limit the ambulance clinician's ability to think creatively (Hagiwara et al., 2013). Protocols are judged to contribute to evidence based emergency medical care, improving medical assessment and overall care (Jensen et al., 2009; Robinson, 2013; Widgren & Jourak, 2011), and knowledge of those protocols have been found to be desirable in the present thesis (IV). Referring to Ricoeur (1981), this could be one way of understanding the concept of explanation, which belongs to the natural sciences, such as medicine. On the other hand those general medical protocols do not relate to the uniqueness and subjectivity of the patient, but can have an impact in the way the ambulance clinicians use them (Martinsen & Eriksson, 2009). The ambulance clinicians try to disregard pre-formed assumptions when approaching the unique patient (III). Ricoeur (1981) suggests that a text refers to the discourse of the reading subject and this gives the text meaning. If caring belongs to the discourse of fixed protocols and general guidelines related to emergency medical care, one might end up only uncovering the bodily meaning of the patients' and significant others' situation, thus losing the holistic approach. On the one hand those guidelines and protocols are essential for providing effective evidence-based medical care to severe injured or ill patients, and lowering mortality (Widgren & Jourak, 2011). On the other hand guidelines are regarded as an obstacle in the ambulance clinicians' work, e.g. being forced to start resuscitation despite knowing it is meaningless and thus disregarding the care of the relatives' comfort (Gunnarsson & Warrén Stomberg, 2009). Caring in the present thesis could be to balance a complex whole, referring to both medical care and caring. Holism in caring may include the self, the body and the world of things as aspects of a unique field (Bullington & Fagerberg, 2013). Hence, caring can refer to all those aspects as realities that exist together, referring to the concept of embodiment in a lifeworld-led care (Galvin & Todres, 2013). This corresponds to Merleau-Ponty's (1997) description of the body as an intermediary of the surrounding world, as a subjective anchor in an objective world. Patients may be understood as dealing with bodily suffering that engenders an existential suffering, when being lonely in their battle with their bodily illness. Thus, they capitulate and hand over the situation to the ambulance clinicians (I). Wiklund (2003) suggests that a suffering person sometimes needs rest in the middle of the struggle, when it is impossible to win the battle. This can be understood as the patients being comforted and calmed in the presence of the ambulance clinicians, despite struggling in the battle with their bodily illness (I), and being secure in their insecurity. Hence, it is not possible to separate the patients' experiences of their physical illness from their subjective experiences. This calls for an ambulance care that

embraces all aspects of the patient's reality, and the ambulance clinicians have to respond to the complexity of the situation (Galvin & Todres, 2009). Hence, this is understood as being flexible in the situation and free from ideological or personal agendas. However, this could include forms of routine procedure, such as guidelines for certain categories of patients' needs (Whetzel & Wagner, 2008). This could also be understood as the ambulance clinicians' caring emerging in the specific encounter with the person at hand (Holmberg & Fagerberg, 2010), when they are being both personal and professional (III), and balancing both medical and caring knowledge (IV).

The ambulance care environment is also a complex whole, described sometimes as insecure (III-IV). The ambulance clinicians cannot determine beforehand the caring situations they will encounter (Campeau, 2008; Wireklint Sundström & Dahlberg, 2012) and describe their own and the patient's safety as a priority of care (III). Thereto the ambulance clinicians' ability to manage their own security and to drive the ambulance safely is desired by their managers (IV). This together can be understood as having the knowledge to create secure preconditions for caring. However, a dilemma can exist when the care of the patient is complicated by the emergence of security risks to the ambulance clinicians, while medical treatment and the patient's well-being remains paramount (Campeau, 2008; Slattery & Silver, 2009). Ambulance clinicians can handle the tension in this dilemma by emphasizing their rescuing role and the undermining of this role that would occur if they were incapacitated (Campeau, 2008). Hence, the ambulance clinicians have to consider the risks within the environment while simultaneously caring for the patient (III), and handling the environment as a complex whole. Ambulance clinicians experience a dilemma when being forced to separate children and parents in order to use safety equipment during the ambulance journey (Öberg, Vicente, & Wahlberg, 2015). At the same time the patient him/herself might be a threat to the ambulance clinicians' security (III). This points to the complexity of caring in an insecure environment, and trying to maintain a holistic perspective in the situation (III-IV).

7.1.2 Caring as an act of togetherness

Caring in this thesis can be understood as an act of togetherness. For patients this represents a development from being lonely to being cared for, being important and involved, but also becoming insignificant and powerless (I) and for significant others being in a shared struggle but at the same being lonely (II). In a lifeworld-led care the human existence is not understood as solitude but in a social world together with others entitled intersubjectivity (Galvin & Todres, 2013). The ambulance clinicians involve themselves personally in the relationship with patients and significant others, having the ambition to encourage shared decision-making (III). Buber (2004) suggests that encountering another is an act of mutuality, in which both are simultaneously agents and recipients. This mutuality emerges in a relationship in which the other is acknowledged as a subject (as a You to an I) and not reduced to an object. This can make ambulance clinicians become personally affected while in the relationship (III), triggering their own feelings of vulnerability and making it difficult to provide

professional care (Öberg et al., 2015). The relationship from the patient's perspective is to be involved while showing respect (I). The ambulance clinicians' experience is that they should be pliable to the patient's wishes, establishing a dialogue with the patient and through humour create an act of togetherness (III). In critical care humour has been found to be the glue that connects carers and patients on a human level, acknowledging the patient's situation and respecting his/her dignity (Dean & Major, 2008), but also as a means of establishing identity (McCreadie & Payne, 2014). This is understood as the ambulance clinician in the relationship acknowledging the others as individuals (Buber, 2004). The relationship in this present thesis can be understood as a process developing from being lonely to being together, and then returning once again to loneliness (I-II). At the same time it conveys the deeper meaning of being secure in the ambulance clinicians' presence (I), being in a shared struggle (II), but also being insignificant when excessively cared for (I).

Caring as an act of togetherness also refers to the patients' and significant others' trust in the ambulance clinicians (I-II). Trust is an important element in critical care (Washington, 1990). Trust can exist even if we encounter someone who does not trust us. Here, this embraces the patient's trust in the ambulance clinician, even when being excessively cared for (I), and the significant others' trust in the ambulance clinician's knowledge of how to care for the affected person, even though they later find themselves to one side and unacknowledged (II). Hence, trusting another person is understood as being vulnerable while in another's power (Bell & Duffy, 2009; Nordvedt & Grimen, 2006). Von Post (2003) suggests that trusting another is to make a sacrifice and give something to another, even though one is uncertain if the other person will be receptive; allowing oneself to be vulnerable in the expectation of the other person accepting this trust. Handing oneself over in trust, being pliable to the ambulance clinicians (I-II), could be one way of sacrificing oneself, although not experiencing this in a negative way because it brings comfort (I). Hence, trusting another depends on how he/she takes responsibility for the trust offered (Løgstrup, 1997). Trust is described as being dependent on both the ambulance clinician's and the patient's personalities and their ability to communicate with each other (Belcher & Jones, 2009), but also refers to the ambulance clinicians as professional representatives of a formal institution (Sellman, 2007). The ambulance clinicians see themselves to be authorities within their profession (III). Hence, the ambulance clinicians were trusted because of their professional competence and knowledge (I) and their capacity to handle the situation (II). At the same time the forming of a caring relationship the collaboration between the nurse and the patient is important (Berg & Danielson, 2007). This requires the ambulance clinician to consider carefully how they use their legitimate professional power (Carter, 2009). Patients accepted having their own power limited when being directed by the ambulance clinician, which was warming and inspired confidence (I). The ambulance clinicians may have a clear idea of where they want the relationship to lead, but at the same time they are aware of the unequal distribution of power (III).

Caring as an act of togetherness could also refer to ambulance clinicians as being professionals within a caring team. Having a professional purpose is described as working together as a team (III), and emphasises the managers' desire that ambulance clinicians know how to co-operate with other healthcare providers (IV). The ambulance care environment requires cooperation within a caring team with each member of the team having a designated role (Gunnarsson & Warrén Stomberg, 2009). On the other hand Elmqvist et al (2010) found that while administering care at the scene of an accident, preserving the patient's life was not restricted by any formal professional borders and engendered co-operation with different professions. To assess the patient and to make decisions the ambulance clinicians support each other within the team, using both verbal and non-verbal communication (Wireklint Sundström & Dahlberg, 2011). However, ambulance clinicians sometimes worry in situations where they lack confidence in their colleague, being concerned about both him/her and themselves (Svensson & Fridlund, 2008). Thus, trust is also important within the ambulance clinician team. This supports the present thesis, as an efficient team is essential when caring for patients and significant others (III). Co-operation between ambulance clinicians is important when handling large accidents or disaster situations, as well as an all-round competence and ability to work independently (Suserud, 2001). At the same time maintaining this cooperation with many other people present is challenging, when one has to keep focused on the patient and protect his/her rights and integrity (III).

7.1.3 Caring as a being in time

Caring as a being in time also emerges in this present thesis. The patients experience the ambulance clinicians' caring presence as temporary (I) and ambulance clinicians experience the relationship as short (III). This corresponds to temporality as described by Galvin and Todres (2013). Reducing time is considered an important standard in ambulance care, especially when caring for critically ill patients, resulting in rapid transport to hospital (*c.f.* Gratton, Garza, Salomone, McElroy, & Shearer, 2010; Price, 2006; Takahashi et al., 2011), as it is the first link in the chain of care (Brown & Bleetman, 2006). Ambulance clinicians are pressured by organisational targets to reduce time, particularly when the caring situations are not life-threatening (O'Hara, Johnson, Siriwardena, et al., 2014). Despite this, patients describe ambulance clinicians as having time to listen to what they say and there being a sufficient amount of time allowed for communication (Melby & Ryan, 2005), and being relieved to be acknowledged as persons (I). The understanding of a defined experience is in the context of an endless continuum of experiences (Husserl, 2004). Husserl makes a distinction between phenomenological time in connection with a stream of subjective experiences and cosmic time, which is objective. The ambulance care situation can be understood as fixed in objective cosmic time, but at the same time belonging to a flow of experiences. The patients describe the relationship with the ambulance clinician as connected to the past (being lonely) and the future (being lonely despite being transferred to hospital care) (I). The significant others describe this situation as moving from being lonely and burdened with an overwhelming responsibility before the

ambulance clinicians arrive, to being relieved in the presence of the ambulance clinicians, but with the remaining worry that the affected person may not survive (II). The ambulance care situation is seen as fixed in time but with a continuous connection to both the past and the future.

7.1.4 Caring as demanding knowledge

Knowledge as an aspect of caring is highlighted by patients, significant others and ambulance clinicians in this thesis (I-III). The knowledge desired to assess the situation from a holistic perspective and to assess and care for different medical diseases was given the highest ranking by managers (IV). A lifeworld-led knowledge in caring corresponds to the ambulance clinicians being guided by an understanding of existential well-being, rather than the absence of illness (Galvin & Todres, 2013). The ambulance clinicians experienced the relationship as being there for the patients, defending their rights and integrity, and it being important to adopt a holistic approach (III). Hence, this supports the understanding of caring as demanding specific knowledge. Galvin and Todres (2013) suggest that health care professionals need both knowledge developed from the implication of an existential view of the patient and technical knowledge to be able to fulfil their professional role. This can be understood as the patients and the significant others in this thesis trusting the ambulance clinician's competence and knowledge (I-II). However, it also expands the understanding of knowledge as going beyond a fixed profession and formal education, such as relevant to ambulance nurses or Emergency Medical Technicians. Schön (1991) describes knowledge as tacit, implicit in our actions. Hence, we may have knowledge in action. This is understood as managers desiring a holistic approach from their ambulance clinicians to a specific situation (IV), but can also be understood as the ability to perceive the patient as a human being (III). In order to care for another person one must have knowledge of the other as a person to be able to respond properly to his/her needs (Mayerhoff, 1990). This is seen as challenging when encountering previously unknown persons in the ambulance care scenario (Holmberg & Fagerberg, 2010), and being prepared for the unprepared (Wireklint Sundström & Dahlberg, 2012). This view of knowledge presents an understanding of being secure in insecurity. Larsson (2012) suggests that using our intuition is one aspect of knowledge. Using different senses to gain knowledge about the patients physical status and situation is described as part of nursing practice (James, Andershed, Gustavsson, & Ternstedt, 2010). Therefore, while caring for patients and significant others ambulance clinicians need knowledge of all aspects of their role, e.g. medical knowledge of diseases, but also knowledge about the whole person (IV), and they have to balance those different areas of knowledge. This indicates a need to see the ambulance clinicians' knowledge as encompassing a situation based on tacit knowledge (Schön, 1991). In this thesis being personal in the relationships with patients were experienced by the ambulance clinicians as emotionally demanding and challenging (III). Practical knowledge was described as the ability to follow a rule in situations where there were no rules, finding the common denominator in apparently diverse experiences (Janik, 1996). To allow ambulance clinicians to build knowledge from their experiences of caring, education needs to

transform this *knowing* in action to *knowledge* in action (Schön, 1991). This can be understood as important in order to convey the professional knowledge (III) as essential in the caring (I-II). Group supervised education for ambulance clinicians to enhance their ability to process negative attitudes and values, to deal with emotional reaction and crises and to solve everyday problems, thus benefitting both the individual and the group (Brink, Bäck-Pettersson, & Sernert, 2012). Hence, if ambulance clinicians are going to expand their knowledge base in both caring and medical care, they need support.

7.2 METHODOLOGICAL CONSIDERATIONS

Different research methods were used in this thesis. To elucidate the relationship with the ambulance clinicians from patients' (I) and significant others' (II) experiences a phenomenological hermeneutical method (Lindseth & Norberg, 2004) was used. To elucidate ambulance clinicians' (III) experiences of the relationship with patients and significant others, a inductive qualitative content analysis (Elo & Kyngäs, 2008) was used. Finally, to identify and estimate the knowledge desired by managers of their ambulance clinicians (IV) a Delphi method (Elo & Kyngäs, 2008) combining both qualitative and a quantitative analysis was used. Taken together the design can be understood as a mixed design, as one approach to an expanded understanding of the research problem (Creswell, 2009). In order to decide an appropriate methodological design the theoretical underpinnings (Walsh & Downe, 2006) as well as the aims guided the choice of methods (Streubert & Carpenter, 2011).

7.2.1 Participants and sample

The participants in this thesis comprised patients (I), significant others (II), ambulance clinicians (III) and ambulance care managers (IV). Initially it was planned that 15 patients would take part in Study I. However, the number of patients was increased in order to achieve the variety of narratives crucial for the chosen method (Lindseth & Norberg, 2004). Hence, the twenty participants who subsequently contributed were judged to provide to a rich and varied data.

When recruiting significant others for Study II seventeen persons were contacted with information about the study and nine agreed to participate. The reason why eight significant others declined participation is unknown. One reason may be that they did not want to relive their experiences of a traumatic life situation. On the other hand the nine who participated in the study contributed sufficiently rich data.

The recruitment of ambulance clinicians (III) was conducted randomly in co-operation with the managers at the two ambulance departments, with the information about the study being sent directly to the ambulance clinicians without passing through managers. Convenient or random sampling are discussed in focus group studies (Freeman, 2006). However, in the present thesis the sample was randomly selected within pre-existing work groups. The reason for this was to avoid the ambulance clinicians feeling that they were being forced by managers to participate. Working with pre-existing work groups was chosen in order to generate homogenous focus groups,

with participants familiar with each other. It was considered that the groups were used to day-to-day interaction and able to talk to each other, factors that are crucial when collecting data through focus group conversations (Morgan, 1997). The participants' formal profession was discussed and a decision was made to include both Registered Nurses and Emergency Medical Technicians. However, most of the participants were Registered Nurses (n=15) with Emergency Medical Technicians in the minority (n=3). This is, however, a common ratio of the two professions among ambulance clinicians in the Swedish ambulance service.

For the final study (IV) 132 managers were provided information about the study, with only 36 (27%) agreeing to participate. The reason for this is unknown, but it could be that pressure of work meant that they did not have time to participate. However, the number of ambulance care manager completing all three rounds totalled 24 of the original 36 (almost 67%), which is considered high for a Delphi study (Keeney et al., 2011). The response rate in each round varied between 83 and 90 percent, which is also considered high enough to achieve rigour. However, one must discuss how response rates are calculated in Delphi studies. One can calculate the response rate from the number of managers originally invited or from those who actually participated in the study. One essential aspect of a Delphi study is to retain the whole group throughout the study, decreasing drop-outs (Wakefield & Watson, 2014). Hence, the response rate was calculated from the 36 who initially agreed to participate in the study, for each specific round and for those who continued all three rounds (Boulkedid, Abdoul, Loustau, Sibony, & Alberti, 2011). However, the low number of participants may have had an impact on the results. Thereto, 35 out of the 36 participants were Registered Nurses, which could have impacted on the result, highlighting knowledge-areas essential in nursing education.

7.2.2 Data collection and analyses

Data was collected from individual interviews (I-II), focus group conversations (III) and questionnaires (IV) and analysed using a phenomenological hermeneutic method (I- II), qualitative content analysis (III-IV) and descriptive statistics (IV). In order to ensure trustworthiness of the results in this thesis *credibility*, *dependability*, *confirmability* and *transferability* as understandings of methodological rigour were taken into account (Streubert & Carpenter, 2011). Compatibility of the chosen methods with the aim of the study, together with a coherence of sampling, data collection and analysis methods, are considered to have ensured the trustworthiness of this thesis (Morse, Barrett, Mayan, Olson, & Spiers, 2002).

The individual interviews (I-II) were conducted with the aim of stimulating the participants' narratives and were judged to generate variation in data (Dahlberg et al., 2008). It was a challenge to conduct the interviews to stimulate the narratives as illustrating the phenomenon as events in the patients' and significant others' everyday lives (Dahlberg et al., 2008). To ensure that patients and significant others felt comfortable in the interview situation they were allowed to choose the location for the

interview. Most of the interviews took place in their homes, but other locations, such as their work place, were also used. Difficulties arose when conducting interviews in crowded places such as certain places of work. Surrounding disturbing elements occasionally disrupted the interviewer and participants. This emphasises the need for rigour when choosing the location for interviews.

The interviews opened with a question about the specific episode (Kvale, 2007), being in need of ambulance care. I carried out all the individual interviews. However, the life event, being in need of ambulance care, spanned a relatively short space of time, and narratives of this event might therefore be short. In order to get a variation of narratives and a rich data, I reflected upon the results after each interview. This helped me to step back, increasing my interview skills. My ambition with the interviews was to balance semi-structured questions and use nods and silence to stimulate the participants' narratives. However, this balance was sometimes challenging, both when interviewing individuals who had much to talk about and kept losing the subject of the study, and those who had difficulties putting their experiences into words. I transcribed the interviews verbatim in order to become familiar with data, reflect upon my experiences of being an interviewer and to create a foundation for the subsequent analyses.

In order to elucidate the ambulance clinicians' experiences of the relationship with patients and significant others (III), focus group conversations were chosen. Compared to the individual interviews the focus groups were judged to contribute data with help of the participant interaction and sharing of experiences (Morgan, 1997). Hence, a low moderate involvement was chosen. I moderated the focus groups together with one of the co-supervisors. The focus groups were initially concentrated on one overall question concerning their experiences of relationships with patients and significant others. However, occasionally the groups strayed from the topic of the study and the moderators had to engineer questions to bring them back on track. It was a challenge to ensure that we did not hinder the interaction within the focus group conversation through excessive moderator involvement nor allow the conversations to drift from the topic. The aim of the focus group conversations was to ensure that the interaction between the participants produced the data (Freeman, 2006; Morgan, 2012). Focus group conversation can also focus on the interaction as data in itself. However, the interaction per se was not the focus of the study, but a means to generate data. When conversations were transcribed verbatim each participant was given a number in order to be able to follow the interaction within the group.

In order to identify and estimate the knowledge desired by managers of their ambulance clinicians (IV) a Delphi method using web-based questionnaires was used. The aim of the first round was to identify issues to be addressed in later rounds and open-ended questions were chosen to increase the richness of the collected data (Powell, 2003). However, other data collection methods in the first round were discussed as alternatives, such as individual interviews (*c.f.* Jirwe et al., 2009) or focus group conversations (*c.f.* O'Connell & Gardner, 2012). In order to embrace managers from all over Sweden a web-based survey with an open-ended question in the first round was

judged to be practical. Being unable to post follow-up questions as in individual or focus group interviews resulted in some answers lacking depth in their data. However, other participants' answers were richer and when the answers were merged into one text covering four pages, the content was judged to be rich, with a variation across the study topic. A risk in Delphi studies is that the researcher is not impartial when analysing the free text answers, thus subjectively influencing the following rounds (Keeney et al., 2006). In order to decrease this risk an inductive content analysis was conducted to remain close to the participants' own words and phrases, and using these when formulating the sub-categories. The impact of the researcher's interpretations and pre-understanding was unavoidable, but not used in the analysis of the data. Understanding parts of the technical aspects of the web survey was considered difficult by some of the participants. This was managed through email correspondence with me. There were 12 participants in total who dropped out during the three rounds. This could have been due to the technical aspects of the web survey being difficult to understand. The web survey was self-generating as the first round produced the knowledge areas for the following rounds.

The phenomenological hermeneutical analyses comprised an intertwined process between the naïve understanding, the structural analysis and the comprehensive understanding (Lindseth & Norberg, 2004), as a movement between the parts and the whole. Corresponding to the understanding of the relationship between understanding and explanation (Ricoeur, 1976), the different analytical steps were meant to validate each other. Thus the naïve understanding was validated by the structural analysis and vice versa. The naïve understanding and the structural analysis were finally brought together in the comprehensive understanding, opening up the world in front of the text (Ricoeur, 1976). In the comprehensive understandings different theories were used, discussed and judged compatible with the aim of the studies. However, those theories were a few of several possible interpretations. The whole process was subjected to an on-going critical discussion, and different pre-understandings were discussed and reflected upon, in order to increase the credibility of the study (Streubert & Carpenter, 2011). However, the results in Studies I and II in the thesis do not give just one understanding, but several possible understandings.

The content analysis in Studies III and IV, was conducted in order to create an inductive approach (Elo & Kyngäs, 2008). Hence, a qualitative content analysis was judged compatible with the aims and the level of data. The data collection methods (focus group conversations and open-ended questionnaires) were chosen in order to produce open and unstructured data, which is described as essential if one is to establish trustworthiness in inductive qualitative content analysis (Elo et al., 2014). The analysis in Study III aimed to structure the text into sub-categories and categories (Hsieh & Shannon, 2005) in order to elucidate the ambulance clinicians' experiences of the phenomenon and not the phenomenon per se. Thus, the analysis aimed to remain close to the participants' own words and phrases (Sandelowski, 2000). At the same time the analysis was conducted with the ambition of formulating internal homogenous and external heterogeneous categories, in order to achieve trustworthiness (Elo et al., 2014). Subjective interpretations in qualitative content analysis are unavoidable

(Graneheim & Lundman, 2004). However, the intention with the analysis was not to interpret the data. An on-going discussion and reflection upon ones pre-understanding was maintained by critical discussion at supervision and in different research seminars, in order to enhance the credibility of the study.

The aim in Study IV was to identify and estimate the knowledge desired by managers of their ambulance clinicians. Thus, the analysis aimed to describe the group's response in Rounds 2 and 3, using descriptive statistics (Creswell, 2009). The data was on an ordinal level (Machin et al., 2007) and therefore a descriptive analysis was deemed suitable. Discussions were held about different analytical aspects such as minimum and maximum range, mean value and standard deviation. Finally, agreement was reached on reporting mean values and standard deviation, in order to capture the group's overall opinion and the variation within the group. Consensus within the group is a crucial aspect of Delphi studies (Keeney et al., 2011). However, the level of consensus has no universal agreement. The level of consensus in this thesis was judged as high in the second round, when considering the low standard deviation. The third round was therefore carried out to interdependently rank the different knowledge areas, and not to reach a higher consensus. A Delphi method can overlap both the quantitative and qualitative ideals. Therefore, to assess the methodological rigour in Delphi studies there is no agreed consensus (Keeney et al., 2011). However, trustworthiness is described as a concept to gauge appropriateness. In order to achieve confirmability a detailed description of the data collection and analytical processes to present an audit trail is considered to have ensured trustworthiness.

Finally, transferability of this thesis can be understood as the probability that the findings will have meaning for others in similar situations and contexts (Streubert & Carpenter, 2011). Swedish ambulance care differs from several other countries especially with regard to the ambulance clinicians' profession. However, the ambulance care's mission is similar, responding to persons with acute and severe illness and/or injury. Hence, caring in the ambulance service as understood in this thesis can have meanings for ambulance care in other countries. Caring in the ambulance service can also have similarities with other acute and emergency care settings, such as Emergency Departments, Intensive Care Units, but also other care settings such as primary care. This thesis therefore contributes relevant knowledge for such settings. However, the results will have to be de-contextualised.

8 CONCLUSIONS AND IMPLICATIONS

This thesis discloses that caring in the ambulance service is a complex phenomenon, requiring a balance between medical care and caring in an insecure environment. Caring as being secure in insecurity embraces patients, significant others, ambulance clinicians and the specific ambulance care context. Hence the ambulance clinicians have to provide care and simultaneously handle insecure environments. This involves being aware of the vulnerability of their patients, but also being vulnerable themselves when emotionally affected. The ambulance clinicians are both personal and professional in their relationship with patients and significant others. The patients and significant others are secure while in the hands of the ambulance clinicians, but also insecure when powerless and lonely. Caring in the ambulance service is understood to involve a connection between the body and the surrounding world. Hence this calls for the ambulance clinicians' knowledge to be able to care for the physical, social and existential needs of their patients and simultaneously take account of the whole person. Trusting relationships in insecure environments between ambulance clinicians, patients and significant others create the arena for caring in this context. The care is fixed in time, often short, but relates to both the past and future. This provides an understanding of caring in the ambulance service as not only existing on its own, but also having a wider influence on the persons' lifeworld linked to the ill/injured body.

The clinical implications of this thesis could be:

- Seeing the patient's suffering as being both physical and existential, to further develop standards of care in the ambulance service.
- Embracing significant others as affected and through both education and practice responding to their unique needs.
- Empowering ambulance clinicians to practice the personal aspects of their professional role, e.g. through colleague supervision.
- Training ambulance clinicians to balance medical care and caring, and to respond holistically to the patient within insecure environments, e.g. through simulated training.
- Developing knowledge in caring from the ambulance clinicians' tacit knowing in action through education and clinical practice, in order that they will become secure in insecurity.

9 FUTURE RESEARCH

Caring in this thesis is understood as complex, with respect to the relationship between ambulance clinicians, patients and significant others. This in turn calls for the ambulance clinicians' knowledge to enable them to balance medical care, caring and the specific ambulance care context. Those aspects of caring in the ambulance service need to be further explored, both theoretically and empirically, in order to develop an evidence base for practice.

Areas for future research:

- How can lifeworld-led interventions in caring in the ambulance care be developed and evaluated?
- How can the ambulance team's impact on caring be understood?
- How can we support the existential needs while provide care for patients and significant others?
- How can we enhance ambulance clinicians' knowledge in order to provide holistic care and to balance medical care and caring?
- How can humour as an aspect of caring be developed within ambulance care?

10 SWEDISH SUMMARY

Ambulanssjukvården har utvecklats från att ha varit fokuserad på transporter av sjuka/skadade till att idag bedriva avancerad vård utanför sjukhus. De vårdande professionerna inom svensk ambulanssjukvård är sjuksköterskor och ambulanssjukvårdare (hädanefter benämnda ambulansvårdare). Ambulansvårdare möter människor med akuta och mindre akuta fysiska vårdbehov och vården inom ambulanssjukvården fokuserar främst på medicinsk vård och behandling. Patienters lidande kan beskrivas som inte enbart fysiskt utan även psykiskt och/eller existentiellt. Närstående är ofta närvarande när en ambulans tillkallas, samtidigt som det finns begränsad kunskap om hur de upplever vårdandet av deras anhöriga. Relationen mellan ambulansvårdare, patient och närstående kan beskrivas som kärnan i vårdandet. Detta ställer krav på vårdarnas professionella kunskap att kunna vårda i en utmanande vårdmiljö. Vårdmiljön inom ambulanssjukvården beskrivs i tidigare studier som oförutsägbar och osäker. För att möta detta kan ambulansvårdarna beskrivas som att vara förberedda på det oförberedda. Därtill möter ambulansvårdarna människor i alla åldrar från det lilla barnet till den multisjuka äldre personen. Följaktligen behöver ambulansvårdarna anpassa sig till unika patientmöten, okända och stressfulla miljöer samtidigt som de skall bedriva avancerad vård. Sammantaget behöver förståelsen av relationer och kunskap som en del av vårdandet inom ambulanssjukvården ökas.

Det övergripande syftet med denna avhandling var att generera förståelse av relationer och kunskap i vårdande inom ambulanssjukvården. Fyra delstudier genomfördes med fyra olika syften. Studie I hade som syfte att belysa innebörden i relationen med ambulansvårdarna utifrån patienters erfarenheter. Studie II hade som syfte att belysa innebörden av relationen med ambulansvårdarna utifrån närståendes erfarenheter. Studie III hade som syfte att belysa ambulansvårdares erfarenheter av relationer med patienter och närstående. Studie IV hade som syfte att identifiera och värdera önskad kunskap hos svenska ambulansvårdare utifrån chefers perspektiv. Olika datainsamlingsmetoder och analysmetoder användes. I studie I och II genomfördes individuella intervjuer som analyserades med en fenomenologisk hermeneutisk metod. I studie III genomfördes fokusgruppskonversationer som analyserades med en kvalitativ innehållsanalys. I studie IV användes en modifierad Delfi-metod som utgick ifrån tre internetbaserade frågeformulär som analyserades med en kvalitativ innehållsanalys och deskriptiv statistik.

I studie I framträdde patienternas relation med ambulansvårdarna, som att ge upp och bli beroende av ambulansvårdarna. Innan ambulansvårdarnas ankomst var patienterna sårbara och utelämnade i en ensam kamp för sin situation. Ambulansvårdarnas närvaro genererade trygghet och ett hopp om att överleva, men var samtidigt kort och tillfällig. Efter att relationen med ambulansvårdarna avslutats var patienterna tillbaka i ensamheten trots att de överlämnats till akutmottagningen. Relationen innebar för patienterna en tillit till vårdarna, deras kompetens och kunskap. I relationen blev

patienterna bekräftade, informerades och lyssnade på, samtidigt var de maktlösa och oviktiga när de upplevde ambulansvårdarnas vård som överdriven.

I studie II framträdde närståendes relation med ambulansvårdarna som att vara ensam tillsammans. Före ambulansvårdarnas ankomst kämpade de närstående en ensam kamp för den drabbade personen. De var hjälplösa och rädda för att den drabbade personen skulle dö. Relationen med ambulansvårdarna innebar att denna kamp delades. De närstående hade tillit till ambulansvårdarnas kunskap och överlämnade ansvaret för den drabbade personen. Detta var en trygghet i en otrygg situation, en stabilitet och ett kontrollerat kaos. Samtidigt som det var en trygghet var de fortfarande oroliga för den drabbade personen, i synnerhet när ambulansvårdarna förmedlade osäkerhet. De närstående drog sig tillbaka för att inte vara i vägen och påverka vården av den drabbade personen negativt. De närstående blev då inte i ambulansvårdarnas fokus, vilket innebar en ensamhet och en upplevelse av att inte vara viktig eller bekräftad som person.

I studie III beskrevs ambulansvårdarnas erfarenheter av relationer med patienter och närstående i tre generiska kategorier; ”Att vara där för den drabbade personen”, ”Att vara personligt involverad” och ”Att ha ett professionellt uppdrag”. Dessa sammanfördes i huvudkategorin; ”Att vara personlig i en professionell roll”.

Ambulansvårdarna involverar sig själva personligen i relationen och blir känslomässigt påverkade. Samtidigt är de en auktoritet med makt. De beskriver att de använder sin makt, erfarenhet och kunskap i vårdandet och för att värna patienten och dennes integritet i en osäker och otrygg vårdmiljö. Vårdteamet beskrivs som betydelsefullt för vårdandet. Samtidigt involverar de både patienten och närstående för att göra dem delaktiga i vården, exempelvis genom att använda humor. Ambulansvårdarna är följsamma mot patientens önskemål, men har samtidigt en klar uppfattning om målet med vården.

I studie IV identifierades och värderades önskad kunskap hos ambulansvårdare utifrån chefers perspektiv. Totalt identifierades 26 önskade kunskapsområden. Dessa värderades och rangordnades. De tre högst rankade önskade kunskapsområdena var; ”Kunskap för att bedöma patientens situation utifrån ett helhetsperspektiv”, ”Medicinsk kunskap för att bedöma och vårda olika sjukdomar” och ”Kunskap för att kunna vårda kritiskt sjuka patienter”. De önskade kunskapsområdena omfattade både medicinsk kunskap och andra kunskapsområden såsom helhetsyn, säker bilkörning, bemötande och att hantera en osäker arbetsmiljö.

Sammantaget visar denna avhandling att vårdande inom ambulanssjukvården är ett komplext fenomen. Det kan förstås som både medicinsk vård och vårdande, i en osäker vårdmiljö. Att vara trygg i otryggheten relaterar till patienter, närstående, ambulansvårdarna och vårdmiljön. Ambulansvårdarna måste ha kunskap för att simultant vårda och hantera vårdmiljön, som kan vara osäker. Det innebär att den sårbara patienten är i fokus, men också att vårdarna blir personligt och emotionellt påverkade. Vårdarna är både personliga och professionella i relationen med patienten och närstående. Patienter och närstående är i relationen trygga i ambulansvårdarnas närhet, men också otrygga när de är maktlösa och ensamma. Vårdande inom ambulanssjukvården kan förstås i relationen mellan kroppen och den omgivande

livsvärlden. Kroppen kan beskrivas som i en pågående relation med livsvärlden, genom att vi igenom kroppen erfar omvärlden. Således behöver ambulansvårdarna kunskap för att utifrån ett helhetsperspektiv simultant vårda fysiska, sociala och existentiella behov. Denna kunskap kan förstås som situations- och erfarenhetsbaserad, vilket kan vara en utmaning i en oförutsägbar vårdmiljö. Det ställer krav på att ha kunskap om de olika delarna, exempelvis medicinsk vård vid olika tillstånd men samtidigt också ha kunskap om helheten och kunna balansera detta i den aktuella vårdsituationen. Tillitsfulla relationer mellan ambulansvårdarna, patienterna och de närstående är arenan för vårdandet. Det leder till en förståelse av vårdandet som en ömsesidig gemenskap som omfattar ambulansvårdarna, patienten och de närstående. Denna gemenskap relaterar också till ett tillitsfullt vårdteam som en viktig aspekt av vårdandet. Detta vårdteam innefattar också andra professioner i vissa vårdsituationer exempelvis större olyckor. Samtidigt innebär detta en utmaning för ambulansvårdarna när de skall värna patientens integritet, i en vårdmiljö där många andra är närvarande. Vårdandet inom ambulanssjukvården är tidsmässigt kort men står i relation till både dåtiden och framtiden. Avhandlingen ger en komplex förståelse av relationer och kunskap inom vårdandet i ambulanssjukvårdens specifika kontext.

De kliniska implikationerna av denna avhandling kan relateras till både utbildning och praxis.

- Förståelsen av patienters lidande som både fysiskt och existentiellt i relation till dennes livsvärld, bör tas i beaktande när vården inom ambulanssjukvården utvecklas.
- Ambulansvårdarna kan behöva stöd för att hantera det personliga i sin professionella roll, exempelvis genom kontinuerlig kollegial handledning.
- Avhandlingen ger också en förståelse för de närstående som drabbade, vilket kan vara av vikt i både utbildning och praxis.
- Ambulansvårdarna bör erbjudas möjligheter att öva förmågan att balansera medicinsk vård och vårdande utifrån ett helhetsperspektiv på patienten och situationen.

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