The Influence of Nursing Structure and Process Variables on Patients' Outcomes and Safety within a High Dependency Unit

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Abstract

Outcomes of nursing practice are used to refer to patient outcomes related to, or as a consequence of, nursing care. This research, comprised two studies, extends the investigation about outcomes of nursing practice. Following Donabedian's framework, the aim was to explore which nursing structure and process variables influence patients' outcomes and safety within a Spanish High Dependency Unit (HDU) and to gain insight into the nurses' and patients' perspectives about the outcome of nursing and how nurses contribute to patient outcomes and safety.

The prospective observational study (Study I) examines if nurses structure and process variables are associated with patients' outcomes and safety in a HDU. The exploratory interview study (Study II) undertaken in the same setting reveals the nurses' and patients' perspectives. To inform the research, a literature review on healthcare quality and a concept analysis of 'the outcomes of nursing practice' was undertaken.

Findings from Study I reproduce similar results to those reported in the wider literature. Nurses' variables, such as years of experience or educational level, impact on patients' outcomes such as mortality and failure to rescue. Theoretical explanations generated by grounded theory in Study II, from the patients' perspective, highlight the core category of 'adapting to HDU admission' and for nurses that of 'enabling patient comfort'. This nurses' intervention led to patient adaptation promoting better patient outcomes and safe process of care.

The study adds to knowledge about the outcomes of nursing care, within the particular context of the HDU, and points to ways that the nurse promotes patients outcomes and safety. Recommendations for future research suggest the need to develop instruments to systematically test the link between nursing interventions to patients' safety and outcomes. The main recommendations for nurse education and training and within practice relate to promoting the importance of patient comfort as an essential aspect of care and the monitoring of its achievement. Recommendations at management level include the need to be aware and to guarantee the necessary conditions to deliver quality and safe care.

High Dependency Unit Nurses' Participants

Benitez, Mar

Castellà, Mateu

Caubet, Raquel

Déniz, Gara

Font, Assumpta

Gauchia, Anna

Giménez, Gloria

Gimeno, Mª Estela

Gómez, Carmen

Guardia, Maria

Hidalgo, Emma

Lizano, Núria

López, Agustina Joaquina

Mascardó, Mª Lluïsa

Mesa, Rosa

Mirabete, Maribel

Oms, Rosa

Pegueroles, Núria

Pérez, Luz Divina

Renedo, Laura

Rovira, Anna

Sánchez, Angel

Soler, Mª Dolors

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Abbreviations

AN   Auxiliary Nurse

EBM   Evidence Based Medicine

EBN   Evidence Based Nursing

EBP   Evidence Based Practice

FTE   Full-time Employment

HDU   High Dependency Unit

LPN   Licensed Practical Nurse

RN   Registered Nurse

UAP   Unlicensed Assistive Personnel

VP   Vocational Nurse

Transcription Conventions

All tape recorded materials and documents are verbatim transcriptions. Data have been edited in order to preserve anonymity and all real names of people and places have been omitted from data extracts. Tape recorded interview extracts and field notes appear in italics.

The original language versions of the direct quotations, either in Catalan or Spanish, presented in this PhD Chapters Seven and Eight can be found in Appendix A in the order reported in these Chapters.

Transcription Conventions:

…. indicates a pause in speech

[….] words, phrases or sentences of the extract have been omitted

[Explanatory or descriptive material added by the researcher in order to make the meaning or context clear]

Part I

SETTING UP THE PROJECT

Chapter 1

Introduction

1.1. Background to the Thesis

The achievement of safe and high quality care is the aim of every healthcare organisation. Safety culture in healthcare first appeared after the Institute of Medicine's report 'To Err is Human' which demonstrated its influence in healthcare safety improvement (Halligan & Zecevic, 2011:573). Moreover when considering quality of healthcare, Donabedian's Quality Framework (Donabedian, 1966, 1988) of structure, process and outcome has been used for decades as a basis for examining quality (Campbell et al., 2000). This thesis uses Donabedian's Quality Framework to analyse the influence of nursing structure and process variables on patients' outcomes and safety within a High Dependency Unit (HDU).

The improvement of population health outcomes depends on the quality of nursing including the deployment of adequate personnel and equipment (Nursing Health Services Research Unit, 2007). From nursing policy practice and professional perspective, a major issue is how to improve patients' outcomes in a financially restricted climate; this has become an integral requirement of health management in many countries in Europe, North America and Australia. Patients' outcomes are included in assessments of the performance of healthcare organisations and, in particular, clinical efficiency (Long, 2006; Agencia de Calidad del Sistema Nacional de Salud, 2008; King's College National Nursing Research Unit, 2008a, 2008b). Alongside this is the '*drive towards ensuring that policy and practice become 'evidence-based' that has led to an increasing demand for outcome-oriented evaluations that produce evidence of effectiveness*' (Clarke, 2006:573).

While healthcare in the late 20th century was dominated by concerns with effectiveness and efficiency, due to the widening gap between available resources and needs, something more is required in the 21st century (Muir Gray, 2007:21-22). As part of the background to this thesis, it is necessary to emphasise that previous research on patient outcomes rarely included variables representing the patients' and the nurses' perspectives. It is therefore time to consider, beside the traditional approach on outcomes research, what the patients' and nurses' perspectives are. According to Muir Gray (2007:10-11) it is necessary to move towards an understanding of patients' priorities and for rethinking health care to be led by patient preferences and values. Several initiatives

that include patients' perspective in health care promote and develop an effective and safe healthcare service (NHS, 2010; Royal College of Nursing, 2010b; Agencia de Calidad del Sistema Nacional de Salud, 2011). In these initiatives, a clear emphasis on the patient's perspective is evident, a feature that is completely relevant to nursing practice which is focussed on individual patients' needs.

Nurses have a unique perspective on delivering care and understanding the needs of patients (Royal College of Nursing, 2010b). Nursing practice is however complex, dynamic and changing. There is a requirement for staffing-outcomes research to go beyond existing evidence; itself located a positivist paradigm, to capture the complexity and the essence of nursing practice. Moreover identification of the outcomes of nursing practice would lead to greater transparency in relation to the nurses' contribution to patient health, the health care system and society (King's College National Nursing Research Unit, 2009).

In the 1990's the term 'nurse-sensitive outcomes' was delineated to overcome the challenge of demonstrating nurses' contribution to patients' outcomes. Based on nurses scope and domain of practice, relevant outcomes are considered to be those that empirical evidence interconnected nursing inputs and interventions for specific patient problems or situations with patient outcomes (Verran, 1996:327; Doran, 2003:vii). The first definition of nurse-sensitive outcomes incorporates the family, characterising the term as a dynamic patient or family caregiver state, condition, or perception that is responsive to nursing interventions (Curley, 1998). Many authors recognised nursing contributions in the clinical care delivery process in what is named 'outcomes potentially sensitive to nursing' (Needleman, 2001) stating that experimental evidence is not always available because of the difficulty in capturing the complex and the invisible aspects of nursing care (Spilsbury & Meyer, 2001). In Doran's review (2003), nurse-sensitive outcomes included were: functional status, self care, symptom management, pain, patient satisfaction and safety (Doran, 2003). In the next two Chapters a conceptual and empirical review of the literature is presented based on a comprehensive and critical analysis of the evidence of outcomes of nursing practice.

The terms 'outcomes of nursing practice' or 'nursing practice outcomes' are used in this PhD thesis to designate patient outcomes related to, or as a consequence of, nursing care and include patients' safety and outcomes variables. Both are used without distinction.

1.2.   Problem Statement and Research Questions

The interest in patient outcomes was primarily borne out of professional experience as an ICU nurse where this researcher had the opportunity to demonstrate the implications and consequences of nursing practice for patients. The current doctoral research, comprised of two studies, extends investigations about outcomes of nursing practice.

The significance of this PhD lies in the influence and relationship between nursing structure and process variables with patients' safety and outcomes. Its aims are threefold: to replicate previous research on the above question in a Spanish HDU context; to explore patients' and nurses' experiences when receiving and performing care and to examine the perceptions on what an outcome means and what is the nurses' role to help accomplish positive patients' outcomes and safe high quality nursing care. A multi-methods approach is applied to explore these issues and thus to add understanding of the mechanisms that support the nursing care-patient outcomes association.

From an extensive examination of the literature in this area, two main gaps are evident in relation to knowledge on outcomes of nursing practice. The first one is associated with the variables within nursing practice that promote or prevent the achievement of safe, high quality nursing care and positive patient outcomes in a HDU. The second is related to patients' and nurses' perceptions on what an outcome means and what is the nurses' role to help accomplish positive outcomes and safe care.

When considering hospital settings, part of the *structure* dimension within Donabedian's framework, most research has focused on medical-surgical units (Spilsbury & Meyer, 2001; Lang et al., 2004; Currie et al., 2005; Lankshear et al., 2005; Numata et al., 2006; Estabrooks et al., 2009); intensive care units have also been widely analysed (Dang et al., 2002; Arabi et al., 2006; Cooke et al., 2008), but only a few studies were undertaken in a HDU setting (Shuldham et al., 2009; Needleman et al., 2011). When considering the *process* variables, a big gap in the evidence base is apparent in relation to the nursing care process, and in particular how to understand or make sense of observed statistical associations between staffing levels and patient outcomes and safety. Only many suggestions on possible mechanisms (Aiken et al., 2002; Aiken, Clarke, Cheung et al., 2003; Needleman et al., 2011) and some evidence reflecting on the importance of trust, intuition, clinical judgment, nurses' values and beliefs, critical analysis, reflective practice

and knowledge are made (Cioffi, 1997; Radwin & Cabral, 2010; Traynor et al., 2010; Spivak et al., 2011). The analysis of evidence on the *outcome* component highlights the prevalence of negative outcomes and the lack of positive ones. In addition, only a few studies consider the patient's point of view (Subirana et al., 2010).

Issues surrounding patient outcomes and safety in addition to the performance of high quality of care have been the focus of nursing research for many years covering different settings and considering multiple variables (Kolcaba, 2001; Needleman et al., 2002; Aiken, Clarke, Cheung et al., 2003; Clarke et al., 2010; Cummings et al., 2010; Kitson et al., 2010; Spence Laschinger et al., 2010; Blegen et al., 2011; Needleman et al., 2011). However little is known about how structure and process are linked to influence patients' outcomes.

To address some of these gaps and thus add to knowledge in this field, two studies were undertaken. Study I, a prospective observational study was carried out to identify variables within nursing practice that promote or prevent the achievement of safe high quality care and positive patient outcomes in a HDU within the Spanish healthcare system. The research question was**:**

– What are the structure and process variables related to nursing that influence patient outcomes and safety in a high dependency unit?

Study II, an exploratory interview study, was undertaken to consider, from patients' and nurses' perspectives, what an outcome means and what is the nurses' role to help accomplish positive outcomes and safe care. Moreover the aim was to generate a substantive theory to answer the following research questions:

– What aspects of nursing care do nurses perceive as influencing patient outcomes and safety in a high dependency unit?

– What do nurses perceive as the outcomes of nursing in a high dependency unit?

– What aspects of nursing care do patients perceive as influencing their outcomes and safety in a high dependency unit?

– What do patients perceive as the outcomes of nursing in a high dependency unit?

The context in both studies is a HDU, and the issues under study (nursing interventions and patients outcomes and safety), were complex, dynamic and changing.

The prospective observational study (Study I) investigates if nurses' structure and process variables influence patients' outcomes and safety in a HDU within a Spanish hospital and whether nursing variables are associated with patients' outcomes and safety. Meanwhile the exploratory interview study (Study II) examines which aspects of nursing practice influence patients' outcomes and safety in a HDU from the perspectives of patients as well as nurses.

The use of a complementary multi-methods approach allowed exploration of nurses' variables that influence patients' outcomes and safety. Furthermore this helps to understand the mechanism supporting the association between variables in the HDU setting and points to the practices used by nurses to promote and enhance positive patients' outcomes and safety.

1.3. Structure of the Thesis

Following this introductory Chapter, the theoretical and conceptual underpinnings of the PhD studies are explored in Chapters Two and Three. Chapter Two analyses what is healthcare quality, focusing on an exploration of Donabedian's Quality Framework and explaining its pivotal role as a guiding framework for this PhD research; it also examines the concept of outcome in addition to reviewing what is understood by safety within healthcare quality. Because the focus of this research is nursing care and its consequences, in Chapter Two the issues of quality within the nursing context are also explored incorporating a review about nursing quality models based on Donabedian's Quality Framework, healthcare quality assessment and quality patient care impact variables. One of the main issues considered in this Chapter is what a difference nursing care can make, in terms of safe, high quality and effective patient care. Because outcomes constitutes a key issue in this PhD research, Chapter Three presents a concept analysis of the outcomes of nursing practice considering the outcome concept within the context of nursing theories, definitions of outcomes according to international organisations as well as outcomes reported in staffing-outcomes research studies. These two Chapters integrate the first part of this thesis, **'Setting Up the Project'**, and provide the background to the thesis.

The second part of the thesis, **'Methodology and Methods'**, is presented in Chapters Four and Five. In Chapter Four, the project design and the methodology of the studies are explored. This includes the philosophical and theoretical perspectives, the rationale for the methodological approach, the process of theory building through Constructivist Grounded

Theory, as well as issues related to reflection on the research process and data gathering and analysis. This Chapter concludes with an overview of the ethical framework and exploration of issues related to standards for quality. Chapter Five outlines the methods employed in the empirical part of the PhD. One section (Section 5.6) explores Study I, the prospective observational study, discussing the processes of participant recruitment, data collection and data analysis. Another section (Section 5.7) reproduces the same pattern for Study II, the exploratory interview study, explaining participants, data generation and data analysis. The final two sections in this Chapter include criteria for evaluation and an overview of the key issues arising during the research process.

The third part of this thesis, **'Findings and Making Sense of the Data'**, is covered in Chapters Six to Ten. Chapter Six describes the findings of Study I. Chapters Seven and Eight reports the findings for Study II; Chapter Seven presents the patients' data and Chapter Eight the nurses' data. Considering both patient and nurse perspectives about outcomes of nursing practice is one of the strengths of this thesis. In Chapter Nine the findings of both studies, Study I and Study II, discuss, first separately, and then together their findings in order to make sense of the data and to situate the study findings with other literature, and finally to understand these studies' contributions to that literature. Chapter Ten closes the thesis by bringing together the conclusions of the thesis, exploring its strengths and limitations as well as its contribution to nursing knowledge, and discussing its implications for practice, management and education as well as making recommendations for further research.

1.4.   Concluding Comments

In essence, it is fundamental to know what works, for who, when, where (in what circumstances) and why it might work, and from whose perspective (Long, 2006:461-485). Only from a multi-method approach, using complementary methods undertaken within the same study setting, can one both demonstrate the relationship between nurse staffing levels and patient outcomes and identify possible mechanisms to explain these, from both the perspective of patients and nurses, and in this way have the potential to contribute to answer complex issues related to outcomes and build new stores of knowledge.

This Chapter has provided insight into the rationale and focus of this PhD. In doing so it has also provided an overview of the structure of the remaining thesis. The next two

Chapters now review the relevant literature which provides the foundation, guiding framework and context for the thesis.

2.1. Introduction

The review of the literature relevant to this thesis is presented in two Chapters. This Chapter explores the concept of healthcare quality, describes Donabedian's Quality Framework that guides this thesis, and defines the concepts of outcomes and safety. It also explores issues of quality within the nursing care context in addition to discussing what a difference nursing care makes. In Chapter Three the term 'outcome of nursing practice' is analysed conceptually in order to make clear what is understood as a patient's outcome when considering the influence of nursing structure and process variables.

Long-standing debates over the definition and nature of the quality of healthcare and factors that contribute and enhance quality have taken on further impetus in cost containment and the pursuit of evidence-based practice (King's College National Nursing Research Unit, 2008b; Maben & Griffiths, 2008). This has led to a heightened interest and emphasis on healthcare quality and outcomes. Within nursing, this debate is multi-faceted as the elements of nursing care have proved difficult to define (Colliere, 1986; Corbin, 2008). Moreover, nursing is a dynamic and evolving profession and professional boundaries are increasingly blurred as nurses take on extended roles and explore new ways of delivering responsive healthcare that meets demand and is cost effective (Benner et al., 1999:498; Griffiths, 2008; Storfjell et al., 2008; Maylone et al., 2011). To address these issues health service quality indicators of nursing care have been suggested (Kleinpell & Gawlinski, 2005; Griffiths, 2008) and patient safety indicators have been applied to international hospital data (Drosler et al., 2009).

Discussions of quality and outcomes are situated within yet wider debates over the safety of healthcare. Safety is a fundamental principle of patient care and is a critical and constantly evolving component of quality management (World Health Organization, 2004). A major focus of current conceptual thinking is to place the responsibility for adverse events on deficiencies in system design, organisation and operation, instead of on individual providers or individual products (World Health Organization, 2004; Methods and Measures Working Group of WHO Patient Safety, 2009). The Institute of Medicine (2003:18) has recommended a set of five core competencies that all healthcare professionals should have in order to practise safely; these competencies had been

developed and incorporated in several nursing educational programmes (Preheim et al., 2009; Valdez, 2009; Chenot & Daniel, 2010; Hickey et al., 2010; Thornlow & McGuinn, 2010; Altmiller, 2011).

This emphasis on safety is however not new to the nursing profession as manifested in the debates about the importance of enhancing nurses' knowledge, and the role of specific training, on quality and safety (Cronenwett et al., 2007; Salmon, 2007; Smith et al., 2007). This Chapter explores healthcare quality within Donabedian's Quality Framework, its core components and the issue of safety. The nursing role within patient safety is analysed and safety definitions from the USA, UK, Spain and nursing organisations along with some of the main patient safety initiatives are reviewed briefly. The goal is to identify and describe the concept of quality, safety, safety quality indicators as well as different variables related to nurses' working conditions that may affect patient safety and quality of care which will inform this PhD thesis. The concept of outcome is explored in Chapter Three.

2.2. What is Healthcare Quality?

In the current healthcare system, quality and patients' outcomes and safety are at the forefront. Healthcare quality is the outcome of healthcare systems' activity and actions taken to improve health or well-being (Campbell et al., 2000). According to the Institute of Medicine (IOM), healthcare should be safe, effective, efficient, personalised, timely and equitable (Institute of Medicine, 2001). In the UK Clinical Governance constitutes the conceptual framework through which National Health Service organizations are accountable for continually improving quality based on establishing an excellence environment; for instance it includes organisational and management factors affecting infection control in hospital settings, medication alerts to improve medication safety, the optimum nursing staff numbers and quality assurance requirements (Scally & Donaldson, 1998; Flynn & McKeown, 2009; Griffiths et al., 2009; Grainger, 2010; Lankshear et al., 2011). Quality should include patient safety, patient experience and the effectiveness of care; moreover quality should be at the heart of everything that healthcare professionals do (Lord Darzi, 2008). The cornerstone of high-quality healthcare is patient safety and although this is a matter for all healthcare professionals, there remains much to be done in order to evaluate the impact of nursing care on positive quality indicators (Mitchell, 2008).

As Donabedian (1966) argued, the concept of quality of care is difficult to define. In a conceptual analysis of quality in healthcare, the meaning of quality was expressed as '*an*

optimal balance between possibilities realised and a framework of norms and values' (Harteloh, 2003:259). Donabedian's framework is presented in the next section as it is one of the bases for this PhD.

2.2.1. Donabedian's Quality Framework

Avedis Donabedian (1966) described his 'structure-process-outcome' framework for assessing the quality of healthcare. Its three components bring together all the information necessary to enable explorations of the quality of care. As reflected in this literature review, this framework is flexible enough to be applied in many contexts and situations becoming highly influential within and outside of healthcare. Moreover it is well known by those involved in healthcare quality research (Agency for Healthcare Research and Quality, 2007b; Glickman et al., 2007; Hearld et al., 2008) and is widely used within the nursing discipline as it is illustrated in section 2.3.1. In addition to the above reasons, the choice of Donabedian's Quality Framework to guide this PhD, is justified due to Donabedian (1974:7) highlighting the importance of developing '*the necessary understanding of the proper role of health practitioners in the psychological and social domains'.* This clearly fits with a nursing care dimension in the evaluation of the quality of care and brings the concept of quality closer to the patients' expectations.

According to Donabedian, quality assessment should be based on a conceptual and operational definition of what quality of care means. The dimensions chosen have an influence on the approach and methods used in quality assessment. To answer this challenge, Donabedian (1966) established three categories or approaches to evaluation (structure, process and outcome), which bring together all the information that allows generating deductions on the quality of care. In short, the structure category addresses attributes of the care setting (material, human and organisational) and evaluates the quality of the organisation in which care takes place; the process category includes all those activities related to giving and receiving care, and the outcomes category includes the effects of care on the health status of patients and the wider population.

Structure denotes the attributes of the setting and includes the attributes of material resources (facilities, equipment, money), human resources (number and qualification of the personnel) and organisational structure (staff organisation, methods of peer review, methods of reimbursement) (Donabedian, 1988). In short it includes stable characteristics that facilitate the provision of health services (Hearld et al., 2008). Despite the fact that this information is easy to get, it has the disadvantage that often the relationship between

structure and process or between the structure and the outcome is not well established (Donabedian, 1966) and therefore the presence of structure or process characteristics cannot guarantee a quality outcome; instead they can only increase its probability (Hearld et al., 2008).

Another way of approaching quality evaluation is to assess the process itself rather than the outcomes. Process denotes what is done in giving and receiving care; it includes patient and staff activities. This approach requires giving specific attention to the dimensions, values and standards that must be used in the assessment. Estimates of the quality obtained are less stable and less final than those obtained from the measurement of outcomes, but are more relevant when what is wanted is to evaluate practice (Donabedian, 1966).

The use of the outcome as a criterion for estimating the quality of care has many advantages, since it is rarely questioned as a dimension of quality. Nevertheless its use has several limitations because measuring some results can be difficult; some may not be relevant and it should always be borne in mind that it can be influenced by many other factors. Finally it does not discern what are the advantages or shortcomings leading to a particular outcome (Donabedian, 1966). Because it is not possible to attribute an outcome to a process of a previous intervention, it is necessary to confirm this outcome through direct evaluation of the process itself (Donabedian, 1988). During the analysis of the outcome category, it has to be kept in mind that quality assessment is only possible by considering the interrelationship between the three categories; this is much more complex than a superficial association, as indicated in Donabedian's original work (Donabedian, 1966). The analysis also requires a previous knowledge of the relationship between structure and process, and between process and outcome before carrying out the evaluation. As Donabedian (1988) makes clear, in the assessment of quality, process and outcomes are complements to each other. Furthermore the validity of either depends on the validity of the assumed causal linkage between the two, meaning that any discrepancy between the joint assessments of both denotes that one or the other is deficient or neglected in some way (Donabedian, 1987). Indeed, in order to use either process and/or outcomes to assess quality, it is necessary to establish their linkage.

It is important to note that, although structure, process and outcomes are conceptually distinct, this is not always possible to discern in practice. Therefore some variables can be classed, or may operate in different situations or at different times, as

part of either structure or process. Despite these considerations outcomes remain the definitive indicators to validate the effectiveness and the quality of care, but they must be used with discrimination (Donabedian, 1966). The focus of this PhD is to identify the influence of nursing structure and process variables on patients' outcomes and safety within a High Dependency Unit. Table 2.1 presents the different variables reported in the staffing-outcomes research sorted by Donabedian's Quality Framework dimensions (Lang et al., 2004; Pearson et al., 2006; Kane et al., 2007; Thungjaroenkul et al., 2007; Cummings et al., 2008; West et al., 2009; Richardson & Storr, 2010; Subirana et al., 2010; Wagner, 2010). The identification of variables within each dimension aims to help to summarise the type of variables reported in the literature, to recognise how they impinge nursing interventions and moreover be aware of those that have not yet been studied when trying to establish a relationship between structure and process variables with patients' outcomes.

Some factors need to be highlighted in this analysis. Related to structure, nurses are the health professionals that provide care around the clock, give constant attention to patients' needs and make clinical decisions. Although of major importance to nursing's role, not many nurses are in charge of service design and sit on governing boards and central committees that influence commissioning and shape nursing practice. Nurses are knowledge workers with the capacity to empower nursing practice in order to tackle organisational stress that nurses deal with in hospitals (Benner & Wrubel, 1988). It is necessary to have a legal framework that clearly defines nursing competencies and ratios because both variables have a clear influence on patients' outcomes (Pronovost et al., 2001; Aiken et al., 2002; Rafferty et al., 2007).

In summary, this PhD, as stated at the beginning of this section (2.2), is explicitly situated in the context of an exploration of quality and outcomes. Its underlying conceptual framework is drawn from Donabedian's highly influential Quality Framework. This framework was chosen because of its comprehensiveness and thus potential conceptual strength and applied to guide the assessment of nursing care process in the HDU.

As outlined above, Donabedian's Quality Framework focuses attention on the defining characteristics of the concept of quality and on three core dimensions. It discusses what are included and excluded within each dimension and draws attention to the challenge about how to establish relationships existing between the dimensions. In

particular, it argues for the need to look at all three dimensions together to gain greatest insight. Donabedian (1980) thus recommends the use of multidimensional assessment methods and inclusion of elements from each dimension of quality to gain a full picture of the quality of care. Finally, as demonstrated in Table 2.1 drawing on nursing research in the staffing-outcomes area, much work is evident within nursing which has identified particular variables within each of the three dimensions of the model, thus reinforcing the relevance of its selection for this PhD. In a following sub-section 2.3.1, the issue of quality is explored within the nursing context, analysing quality models based on Donabedian's Quality Framework. These models all share a common feature in that they all seek to establish the relationship between the various dimensions, drawing on particular variables within each dimension, used to conceptualise quality.

2.2.2. What is an Outcome?

According to Donabedian (1988:1745), '*outcome denotes the effects of care on the health status of patients and populations*'. It is simply definable as an end-result (effect) of a prior process: an outcome is '*that part of the output of a process which can be attributed to the process itself, rather than to something else'* (Long, 1999:162-163). This definition belies the inherent complexity in the notion of outcome; a multitude of factors may influence the outcome (Donabedian, 1988). It becomes necessary to argue for the plausibility of a linkage between the (prior) process and its corresponding outcome (Long, 1999). This has particular resonance in nursing where any patient outcome is difficult to attribute solely to nursing interventions, as the care package commonly comprises a range of treatments delivered by a multi-disciplinary team.

Lilford *et al.* (2007) following similar reasoning argue that outcomes are not often an accurate indicator of a prior process because there are so many confounding factors or intervening variables, specially when the outcome indicators are not specific measures of quality. In the UK the first NHS outcomes framework was published in 2010; it sets out the outcomes and corresponding indicators that will be used to hold the NHS Commissioning Board to account for the outcomes it delivers through commissioning health services from 2012/13 (Department of Health, 2010).

Table 2.1: Relevant elements in each of Donabedian's Quality Framework categories

Structure	Process	Outcome
Patient characteristics:	**Nursing interventions:**	**Patient outcomes:**
Age, gender, marital status, illness characteristics	Monitoring patient health status	Failure to rescue
	Performing therapeutic treatments	Falls
	Integrating patient care to avoid gaps in healthcare	Functional independence
Human Resources:		Functional status
Ratios, education, experience, expertise		Knowledge of condition and treatment
	Team working / nature of care:	Length of stay
	Team communication	Medications errors
Organisational policies:	Coordination of care	Mortality
International, national, locally	Nurse competencies & Legal framework	Nosocomial infection
Staffing levels, staff mix, workforce planning, workload, turnover	Model of care	Pain control
	Safety issues	Pain prevalence
	Evidence-based practice	Patient safety
Working Environment	Fair /poor quality of care unit	Patient satisfaction with care
	Magnet hospital process characteristics	Quality of care
Materials and Equipment	Nursing model	Quality of life
	Pathways, protocols and guidelines implementation	Risk adjusted mortality rates
	Patient-nurse interaction	Social functioning
	Process of care	Sores
		Strength of treatment alliance
	Nursing leadership	Symptom control and change in symptom severity
		Therapeutic self-care
		Unplanned emergency department visits
		Unplanned hospital readmission
		Unplanned visits to the physician or emergency department
		Staff outcomes:
		Absenteeism
		Burnout
		High emotional exhaustion
		Jobs dissatisfaction
		Role tension experienced related with work
		System outcomes:
		Direct and total inpatient care Costs
		Length of stay

In Spain at national and regional government level, several strategies have been developed in order to promote clinical excellence. These have been based on the best available evidence which was also used to develop standards of quality of care with outcomes and indicators related to patient safety in hospitals settings in the national health system (Departament de Salut, 2005a, 2005b; Agencia de Calidad del Sistema Nacional de Salud, 2008).

2.2.3. What is Safety?

Interest in the quality of healthcare is closely linked to concerns and guidelines regarding the safety of healthcare (Agencia Nacional para Seguridad del Paciente (NPSA), 2005; Agencia de Calidad del Sistema Nacional de Salud, 2008; Department of Health, 2010; Agencia de Calidad del Sistema Nacional de Salud, 2011; Joint Commission Resources, 2011).

The Joint Commission on Accreditation of Healthcare Organizations (World Health Organization, 2004) (JCAHO) in 2001 initiated a campaign named 'Speak Up for Patient Safety' (World Health Organization, 2004) and in May 2002, at the Health Assembly of WHO, member states were recommended to focus on the problem of patient safety by developing standards and guidelines as well as promoting evidence-based policies to improve care quality and safety (Fifty-fifth World Health Assembly, 2002). Some specific activities were the creation, between 2003 and 2004, of a World Alliance for Patient Safety and the development of a Taxonomy for Patient Safety, named International Patient Safety Event Taxonomy (IPSET) (World Health Organization, 2004). Safety, a fundamental principle of patient care, is an evolving critical component of quality management (World Health Organization, 2004). Although the '*nursing profession has prided itself in being the patient's advocate and the keeper of quality and safety'* (Salmon, 2007:118), the point is that patient safety is a matter for all healthcare professionals with the emphasis placed on the care system. This ensures that healthcare professionals learn from errors that do occur and that a culture of safety is built which integrates patients, healthcare professionals and organisations to prevent errors (Aspden et al., 2004; World Health Organization, 2004; Clancy et al., 2005; Mitchell, 2008). Patient safety is also defined as freedom from accidental injury due to medical care, absence of medical errors or absence of misuse of services (International Council of Nurses, 2002; Aspden et al., 2004; Clancy et al., 2005; Mitchell, 2008).

The International Council of Nursing (ICN) published in 2002 a position statement on patient safety (International Council of Nurses, 2002). In this document the ICN clearly states nurses and national nurses associations' accountability related to patient safety. These are presented in Table 2.2 which shows the range of nursing interventions that promote and facilitate patients' safety and the quality of care. The eleven statements reflect common safety practices as well as the important role of the communication between nurses, patients and other healthcare professionals. Also it reflects the

importance of team nursing work linked to the nursing structure within the workplace and national organisations.

Table 2.2: Nurses and national nurses' associations' accountability related with patient safety (International Council of Nurses, 2002)

- Inform patients and families of potential risks
- Report adverse events to the appropriate authorities promptly
- Take an active role in assessing the safety and quality of care
- Improve communication with patients and other healthcare professionals
- Lobby for adequate staffing levels
- Support measures that improve patient safety
- Promote rigorous infection control programmes
- Lobby for standardised treatment policies and protocols that minimise errors
- Liaise with the professional bodies representing pharmacists, physicians and others to improve packaging and labelling of medications
- Collaborate with national reporting systems to record, analyse and learn from adverse events
- Develop mechanisms, for example through accreditation, to recognise the characteristics of healthcare providers that offer a benchmark for excellence in patient safety

In March 2005, the JCAHO and Joint Commission Resources (JCR) established the Joint Commission International Centre for Patient Safety (JCICPS), with the mission of continuously improving patient safety in all healthcare settings. One of its programmes is the National Patient Safety Goals which includes eleven programmes for each care setting and area. Within the hospital programme, Table 2.3 presents the goals for 2011 (Joint Commission Resources, 2011). In these goals the central role that nurses play in patient safety is clearly reflected (Joint Commission Resources, 2011).

Table 2.3: National Patient Safety Goals within the hospital program for 2011

- Use at least two patient identifiers when providing care, treatment, and services
- Eliminate transfusion errors related to patient misidentification
- Report critical results of tests and diagnostic procedures on a timely basis
- Label all medications, medication containers, and other solutions on and off the sterile field in perioperative and other procedural settings
- Reduce the likelihood of patient harm associated with the use of anticoagulant therapy
- Maintain and communicate accurate patient medication information
- Comply with either the current Centers for Disease Control and Prevention (CDC) hand hygiene guidelines or the current World Health Organization (WHO) hand hygiene guidelines
- Implement evidence-based practices to prevent health care–associated infections due to multidrug-resistant organisms in acute care hospitals
- Implement evidence-based practices to prevent central line–associated bloodstream infections
- Implement evidence-based practices for preventing surgical site infections
- Implement evidence-based practices to prevent indwelling catheter-associated urinary tract infections (CAUTI)
- Identify patients at risk for suicide
- Conduct a preprocedure verification process
- Mark the procedure site and a time-out is performed before the procedure

Moreover in the UK, Department of Health (Department of Health, 2011) has expanded its list of 'never events' detail in Table 2.4. Nurses are the health professionals more involved or the ones who performed the last action that could lead to the undesirable event.

Table 2.4: Department of Health 25 'never events'

- Wrong site surgery (existing)
- Wrong implant/prosthesis (new)
- Retained foreign object post-operation (existing)
- Wrongly prepared high-risk injectable medication (new)
- Maladministration of potassium-containing solutions (modified)
- Wrong route administration of chemotherapy (existing)
- Wrong route administration of oral/enteral treatment (new)
- Intravenous administration of epidural medication (new)
- Maladministration of Insulin (new)
- Overdose of midazolam during conscious sedation (new)
- Opioid overdose of an opioid-naïve patient (new)
- Inappropriate administration of daily oral methotrexate (new)
- Suicide using non-collapsible rails (existing)
- Escape of a transferred prisoner (existing)
- Falls from unrestricted windows (new)
- Entrapment in bedrails (new)
- Transfusion of ABO-incompatible blood components (new)
- Transplantation of ABO or HLA-incompatible Organs (new)
- Misplaced naso- or oro-gastric tubes (modified)
- Wrong gas administered (new)
- Failure to monitor and respond to oxygen saturation (new)
- Air embolism (new)
- Misidentification of patients (new)
- Severe scalding of patients (new)
- Maternal death due to post partum haemorrhage after elective Caesarean section (modified)

Indeed competencies identified for nursing that lead to a safe practice were: patient-centred care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics. These competencies have been adopted within the Quality and Safety Education for Nurses (QSEN) framework, recommending statements of the knowledge, skills, and attitudes for each competency that should be reflected in the pre-licensure nursing education programmes (Cronenwett et al., 2007).

According to the Royal College of Nursing (RCN) patient safety refers to the concept that patients in healthcare settings are achieving intended outcomes meaning that keeping patients safe is fundamental to quality nursing care (Royal College on Nursing, 2011). Patient safety is closely related to the process of care per se, because it is during the delivery of care that the prevention of harm or accidental injuries occurs. Savitz *et al.* (2005) report five process measures under the scope of nursing practice that must be

considered as part of patient safety: unfinished or incomplete care; use of a standard technique; prudent monitoring of invasive medical devices; systematic skin inspection, cleaning and positioning; and adherence to care pathways/protocols. In Spain in 2005 the 'Seven Steps to Patient Safety' developed in the USA by the National Patient Safety Agency (NPSA) were adopted to the Spanish context (Agencia Nacional para Seguridad del Paciente (NPSA), 2005).

In summary, it is evident that the focus of patient safety extends to a safety climate, in short staff attitudes about patient safety, and to a safety culture, understood as *'the way patient safety is thought about, structured and implemented in an organisation'* (The Evidence Centre, 2011:3). A recent research scan pointed to a positive link between safety climate and readmissions and length of stay; furthermore when examining the safety culture, a positive link was observed with adverse events and medication errors (The Evidence Centre, 2011). These findings support the argument that improving safety culture and climate affects patient outcomes.

2.3. Exploring Issues of Quality Within the Nursing Context

In this section models based on Donabedian's Quality Framework, nursing specific health quality assessment models and variables that influence patient care quality are reviewed.

2.3.1. Models based on Donabedian's Quality Framework

There are several models to assess the quality of nursing care reported in nursing literature based on the Donabedian's Quality Framework (Donabedian, 1966, 1988). Table 2.5 presents an overview of these models, to illustrate each model's components and to facilitate understanding the influence of structure and process components on outcomes; each one gives details of those elements considered in structure-process-outcomes categories. However, it is important to note that all these models have a functional tendency not to take into account other elements that could be involved in healthcare quality such as holistic care, professionalism and emotional, motivational and personal values (Coulon et al., 1996; Glen, 1998a, 1998b; Flaming, 2002; Kalisch, 2006; Mellott et al., 2008).

The Rush Medicus Nursing Process Methodology was developed in the USA in 1972 to examine the effects of nurse staffing on the quality of care (Middleton & Lumby, 1998). Unlike other instruments developed for outcomes evaluation, Rush is based solely on the

nursing process and centred on patient needs or problems (Middleton & Lumby, 1998). There was then adapted as Monitor for use in the UK (Redfern & Norman, 1990).

The Dynamic Standard-Setting System (DySSSy) was developed by Kitson and colleagues at the Royal College of Nursing in 1989 (Harvey & Kitson, 1996). Before instrument development, Kitson (1987) underlined the importance of standards of nursing practice. She states that standards *'can only be assured if the profession is able to find ways of responding to the intuition and gut reactions of its practitioners'* (Kitson, 1987:321). The DySSSy is based on that approach meaning that nurses themselves are required to identify the aspects of care considered noteworthy for high quality nursing care in their local setting (Redfern & Norman, 1990; Norman & Redfern, 1995).

In 1998, the American Academy of Nursing Expert Panel on Quality of Healthcare introduced the Quality Health Outcomes Model (Mitchell et al., 1998). Based on Donabedian's model, the Quality Health Outcomes Model, used a dynamic model to try to explain complex relationships that can lead to testing variables that are sensitive to nursing interventions effectively. Mitchell *et al.* (1998) suggest that interventions affect and are affected by both system and client characteristics in producing desired outcomes. Previous authors argued that Donabedian's Quality Framework is essentially linear, because structure components affect processes, which in turn affect outcomes. In contrast the authors proposed a framework as a dynamic model *'that recognises the feedback that occurs among clients, the system or context in which the care is provided, and interventions'* (Mitchell et al., 1998:44).

Doran (2002; Doran, 2003) provided a more recent approach which reformulated the work done by Irvine in 1998 (Irvine et al., 1998). This model aims to identify and explore variables that may be 'sensitive' to nursing interventions. Within the Nursing Role Effectiveness Model, Doran classified nursing-sensitive patient outcomes into six categories and considered within the process variables nursing independent, nursing medical care-related, and the nursing interdependent role functions. This focus on process allows differentiation of nursing role interventions types and can help to identify the specific contribution of nurses' to patients' outcomes.

These different models emphasise that patient outcome assessment after a care intervention is essential. It is not possible to approach outcome evaluation without the examination of structure and process. Moreover it is necessary to highlight that quality is more than consumer satisfaction; social influence must also be considered, in particular,

the social influence, the social construct negotiated between providers, recipients and managers (Redfern & Norman, 1990).

Table 2.5: Overview of Nursing Quality Models based on Donabedian's Quality Framework

Framework/model	Structure	Process	Outcome
Donabedian[1]	Environment Human Resources Organizational policies Materials & equipment	Professional: Technical Interpersonal Patient	Effect of care on health status of patients & population
Rush Medicus Nursing Process Methodology[2]	Best environment	Care delivery	Patient best outcomes
Dynamic Standard-Setting System[3]	Care is organised along primary nursing lines	The nurse undertakes a collaborative assessment with the resident, relatives and/ or friends within 24hours of admission	Residents demonstrate that they have a sense of control over their lives
Quality Health Outcomes Model[4]	System: individual, organisation, group Client: individual, family, community	Clinical processes: direct and indirect interventions and related activities	Achievement of appropriate self-care, demonstration of health- promoting behaviours, health-related quality of life, perception of being well-care-for, symptom management
Nursing Role Effectiveness Model[5]	Patient: age, gender, marital status, illness characteristics Nurse: education, experience Organisational: staffing, staff mix, workload, work environment	Independent role: nursing interventions Medical care-related role: medically directed care, expanded scope of nursing practice Interdependent role: team communication, coordination of care	Prevention of complication like injury or nosocomial infection Clinical outcomes such as symptom control Knowledge of the disease, its treatment and management of side effects Functional health outcomes such as physical, social, cognitive, mental functioning, and self-care abilities Satisfaction with care Cost

[1](Donabedian, 1966, 1988); [2](Middleton & Lumby, 1998); [3](Harvey & Kitson, 1996); [4](Mitchell et al., 1998); [5](Doran et al., 2002; Doran, 2003)

While these models allow obtaining a more specific approach in relation to nursing care quality, in this thesis it has been considered most appropriate to base the work on Donabedian's seminal framework, rather than one or other of the models summarised in Table 2.5, themselves based on Donabedian's framework. Examination of these models was undertaken here more to demonstrate the value of Donabedian's framework and thus its relevance as a conceptual framework for the PhD. This choice was guided by the nature of the research question (to explore the outcomes of nursing practice), the specificity of the study setting (a HDU unit) and the richness of a multi-method design. Its underlying aim is to provide a multidimensional view to study outcomes considering both the

patients' and nurses' perceptions and experience while receiving or giving care, within the wider concept of a quality frame of reference.

When considering outcomes within the nursing context, as is elaborated within Chapter Three in the concept analysis of 'outcomes of nursing practice', the need is to focus primarily on the patient's experience during care or as a consequence of care provided by the nurse. Because it is difficult to identify outcomes that can be uniquely attributed to the nurses' interventions, assessing and understanding patients' and nurses' perceptions, guided by the broad Donabedian's Quality Framework, that is, in the context of all three dimensions, becomes key to deciphering those outcomes related or as identified as a consequence of caregiving.

2.3.2. Healthcare Quality Assessment

Healthcare quality assessment involves responding to the patients', users' and families' needs and expectations, whilst reflecting a concern for work performed adequately with the aim of providing excellent quality care. Healthcare quality promotion and evaluation should be an unavoidable responsibility of any healthcare organisation. In this section healthcare care quality is reviewed from a nursing perspective.

More than a century ago in 1860, Florence Nightingale made a series of critical reports on the quality of nursing care (Nightingale, 1859/1992). Ernest Codman in 1910, as did Florence Nightingale, highlighted the need to improve hospital conditions as well as making sure that patient care had been effective (Luce, 1994). Seven years later, based on their approaches a Hospital Standardisation Programme was created by the American College of Surgeons. With the adoption of minimum standards and with several American and Canadian healthcare associations and groups of health professionals coming together, the Joint Commission on Accreditation of Hospitals (JCAHO) was created in 1951. This was an independent not-for-profit organisation whose primary purpose is to provide voluntary accreditation (The Joint Commission, 2011). Since the early 1950's, studies on the quality of nursing care have been directed towards assessment or control of the quality of care. The pioneers' instruments for evaluation of the quality of nursing care were developed in the USA within this context of healthcare quality evaluation.

The American Nurses Association developed national nursing standards, during the 1960s and 1970s; a wide range of authors developed tools for assessment or control of the quality of care and the predominant model adopted was one of inspection (Harvey &

Kitson, 1996). It is interesting to note that most of these authors have adopted a nursing conceptual framework to develop their evaluation tool; an element that has provided a particular feature to their work. Such tools include the Phaneuf Nursing Audit, CASH Nursing Care Evaluation Instrument, Qualpacs, Monitor and Senior Monitor (Estes, 1964; Redfern & Norman, 1990; Sparrow & Robinson, 1992; Tomalin et al., 1993; Norman & Redfern, 1995).

Donabedian's (1966) work has a clear influence in healthcare, and he was recognised as the founder of the healthcare quality movement. In the same year (1966), JCAH changed their initial approach of minimum standards and moved towards optimal achievable standards and also embraced the structure-process-outcomes model which is still in use today (Luce, 1994).

In the 1990's a new trend of quality evaluation began to appear involving the assessment of continuous quality improvement (CQI) and total quality management (TQM) (Ingersoll & Mitchell, 1999). This became increasingly related to cost effectiveness. The most common nursing quality systems used in the UK were Monitor, Qualpacs and DySSSy (Shuldham, 1995; Davies & O'Gorman, 1996; Harvey & Kitson, 1996). The main objectives were to reduce costs and to increase customer satisfaction. Deming helped to establish this change of approach to quality, with the Deming's 85/15 rule, noting that 85% of a worker's effectiveness is determined by the system he works within, only 15% is by his own skill. Several studies have shown that when improving quality it is necessary to address all aspects of the organisation in order to promote the quality of healthcare. The concept of overall quality responds to this demand (Williams, 1992). The movement for Total Quality Management (TQM) and Continuous Quality Improvement (CQI) stresses continuous improvement of healthcare quality (Ellis, 2000; Counte & Meurer, 2001; Solomons & Spross, 2011). Different organisations such as the JCAH, the World Health Organization, as well as Ministries of Health from different European countries, promote this approach of continuous improvement in healthcare quality (O'Neill et al., 2011).

Healthcare quality was first introduced in Spain in 1983 with the creation of the first healthcare quality programme at the *Hospital de la Santa Creu i Sant Pau* in Barcelona and the establishment in Madrid of the Spanish Society of Quality Health Control (*Sociedad Española de Control de Calidad Asistencial*) (Humet, 2001). In the late 1980's, Frias (1990) conducted a study in a primary care setting that contributed to the development of a quality control model. This study identified and selected nursing process criteria and

standards and assessed the quality of care process through the implementation of these criteria and standards. As a key element it was stated that there is a need for measurements that address deficiencies in order to contribute to the improvement the quality of care. Since the beginning of the 1950s until today, the concern of nurses in providing appropriate care with optimum quality level and to evaluate them in order to demonstrate the nurses' contribution to healthcare, has been constant.

2.3.3. Quality Patient Care Impacting Variables

Being able to give quality patient care is the highest goal of any professional nurse; it represents the connection between nurse staffing, care delivery and patient outcomes. Magnet hospitals have emerged in the 1980s, as a reference point for high quality care, characterised by higher nurse-patients ratios, clinical autonomy, control over nursing practice, stronger nurse-physician communication and relationships, educationally prepared and competent nurses, strong administrative and organisational support and basically a focus on the patient as the central concern of healthcare (Hinshaw, 2006:83). Research evidence indicates that organisations reflecting these strengths of Magnet hospitals have improved outcomes for patients, nurses and employers (Urden, 2006:104). Higher nurse-to-patient ratios were the major factor explaining their lower mortality rates; moreover nurse work environment was the single most important variable explaining the highest levels of patient satisfaction(Aiken, 2006). Over a period of 17 years, more than 4,000 staff nurses contribute to enlarge the Essentials of Magnetism list composed of 37 items. From these items, eight essential to the production of quality of care were identified and therefore considered as the Essentials of Magnetism (Kramer & Schmalenberg, 2006:29). These eight variables which are presented in Table 2.6 go beyond the structural and process components of Donabedian's Quality Framework.

Table 2.6: Essentials of Magnetism

- Working with other nurses who are clinically competent
- Good nurse-physician relationships and communication
- Nurse autonomy and accountability
- Supportive nurse manager-supervisor
- Control over nursing practice and practice environment
- Support for Education
- Adequate nurse staffing
- Concern for the patient is paramount

According to Talsma *et al.* (2008), the guiding principles for quality healthcare in the 21st century must include safety as a system property, care based on continuous health relationships, customisation based on patient needs and values, the patient as a source of control, collaboration among clinicians and healthcare inequalities. The following is a brief description of each of the variables from the Magnet hospital study and from Talsma *et al's* principles, which are redefined and incorporated as components of the Donabedian framework. The main four topics that arise from these principles are: safety, health disparities (structure category) and communications and collaboration in addition to patient and family centred care (process category). Table 2.7 presents this information.

Within the structure component, staff and manager components impact on safety and quality care. El-Jardali and Lagane (2005), in a review of the literature on links between structural factors and outcomes as well as the care process and outcomes, help to clarify this. They concluded the quality of the work environment is seen as a determinant of the quality of healthcare services provided (El-Jardali & Lagace, 2005). In relation to the process component, significant care process and outcomes links were also found in research studies (El-Jardali & Lagace, 2005). If communication between physicians and nurses is timely, complete and accurate, it results in an early recognition and intervention of potentially hazardous patient situations affecting the unit-level capacity to deliver nursing care (Mark et al., 2004). When nurses and physicians communicate effectively, better outcomes are reported, such as lower mortality rates and lower readmission rates to the intensive care unit (Ingersoll & Mitchell, 1999). Nurses variables impacting on the quality of care and patient safety could be summarised by taking into account who nurses are, where nurses work, what nurses do (Page, 2004:65-107) and how nurses do it. Table 2.7 presents a summary overview of the elements that influenced quality of care.

The two rows represent structure and process, based on Donabedian's Quality Framework, the first column the four main issues that impact on the quality of healthcare, the second column variables involved, and the third column which components and interventions facilitate the achievement of the variable. As Kramer and Schmalenberg (2005) identified, the most significant nursing care structural elements influencing quality were skill mix, staffing, time and workload, all of which can be considered as external elements influencing nursing quality of care. Variables within the structure dimension provide information about who nurses are and where nurses work, while variables within the process dimension address what nurses do and how nurses do it.

Table 2.7: Structure and process elements that influenced quality of care

	Issues	Variables	Component / Interventions
Structure	Safety	Working with other nurses who are clinically competent Nurse autonomy and accountability Adequate nurse staffing Supportive nurse manager-supervisor Control over nursing practice and practice environment Support for Education	Staff component: Clinical competence Autonomy and accountability Adequate nurse staffing Manager component: Supportive supervisor Control over practice Education facilities
	Health inequalities	Health inequalities	Inequalities of access to quality of care
Process	Communications and collaboration	Good nurse-physician relationships and communication Care based on continuous health relationships Collaboration among clinicians	Communicate effectively: communication is timely, complete and accurate Early recognition and intervention of potentially hazardous patient situations
	Patient and family centred care	Concern for the patient is paramount Customisations based on patient needs and values Patient as a sources of control	Concern for the patient needs and values

For instance, when nurse staffing is inadequate, it is a major problem for the quality of care as evidenced by inadequate time for patients. In short, to promote nurses' capability to deliver high quality nursing care, it is essential to consider the time available for surveillance, to detect patient complications, to maintain patient safety, and for team collaboration. A factor linking structure and process categories is time.

Within process the focus is on what nurses do and also how they do it. Illustrating this further, Kalisch (2006; Kalisch et al., 2009) in an empirical study identified nine elements of regularly missed nursing care. These were: ambulation, turning, delayed or missed feeding, patient teaching, discharge planning, emotional support, hygiene, intake and output documentation, and surveillance. To complete this section, it is important to highlight how nurses take care of patients, in short how nurses do it. This how is completely related to the level of expertise and in contrast could be considered to the external elements described above, as an internal element key to providing high quality patient care. Benner applied the levels of expertise and skill, identified by Dreyfus and Dreyfus in 1980, to nursing, differentiating novice, advanced beginner, competent, proficient and expert nurses; all levels operate and are essential components of quality nursing care (Benner, 1982).

These levels reflect changes in acquisition and development of skill through five levels of proficiency: (1) *novice:* beginners who have no experience with situations in which they must perform tasks; (2) *advanced beginners:* individuals who can demonstrate marginally acceptable performance based on a foundation of experience with real situations; (3) *competent:* individuals who has been on the job 2 or 3 years in a similar situation; (4) *proficient:* performer who perceives situations as wholes rather than as isolated observations; and (5) *expert:* based on a wealth of background experience individuals operate from a deep understanding of the situation enabling an intuitive grasp of situations and quick targeting of problem areas (Benner, 1982); expert nurses use intuition as an essential aspect of clinical judgment (Benner & Tanner, 1987). According to this framework, the level of expertise is subject matter–specific and does not necessarily mean the same as the level of experience, typically measured as the number of years an individual has been employed in nursing. Experience captures exposure to opportunities for experience and the gaining of expertise, but such exposure is not always a guarantee of expertise however experience has been associated with better patient care (Page, 2004:62-63).

2.4. What a Difference Nursing Care Makes?

Safe, High Quality and Effective Nursing Care

Nursing and caring are complementary terms but do not refer to the same elements (Kitson et al., 1993:30). The ICN (International Council of Nurses, 2010) defines nursing as encompassing *'autonomous and collaborative care of individuals of all ages, families, groups and communities, sick or well and in all settings. Nursing includes the promotion of health, prevention of illness, and the care of ill, disabled and dying people. Advocacy, promotion of a safe environment, research, participation in shaping health policy and in patient and health systems management, and education are also key nursing roles'*. In a similar manner, the RCN (2003b) expresses its definition of nursing in terms of a core of six defining characteristics, embracing a particular purpose, mode of intervention, domain, focus, value base and commitment to partnership. The RCN thus defines nursing as '*the use of clinical judgement in the provision of care to enable people to improve, maintain, or recover health, to cope with health problems, and to achieve the best possible quality of life, whatever their disease or disability, until death'* (Royal College of Nursing, 2003b).

Caring is a dynamic concept within nursing theories and fundamental to its practice as can be seen below. From a conceptual point of view several nursing theorists discuss

the meaning of caring (Davis, 2006). For instance Collière (1986) reviewed the origins of caring practice, Leininger focused on caring from a transcultural perspective (Leininger, 1988, 1999) while Watson moved from a vision of caring as a therapeutic relationship to focus on the ethics of caring (Watson & Smith, 2002; Watson, 2003; Watson & Foster, 2003; Watson, 2005, 2009). This latter perspective is fully explored by Benner's work (Benner, 1997, 2001a, 2002; Benner et al., 2008) who outlines caring with *'its roots in ethical and phenomenological theories of moral development'* (Kitson et al., 1993:41; Kitson et al., 2010). The type, extent and quality of care provided may vary in relation to the education and training of nurses, their practice skills and level of competence and responsibility. Brilowski and Wendler (2005) identify five core attributes of caring centred on the relationship between nurse and patient. These are relationship, action (nursing care, touch, presence and competence), attitude, acceptance and variability.

To advance understanding of the outcomes of nursing practice, it is necessary to analyse in detail the concept and evolution of the nursing process through which consistent progress towards professional status was made. Moving from the concept of a set of separate actions, to a process itself, Orlando in 1961 (Marriner, 2006) defined the nursing process; this perspective gained rapid acceptance both in the USA and the UK   (de la Cuesta, 1983). Nursing actions were considered and renamed as a process discipline with three specific requirements (assessment, planning and implementation). At this stage it was seen primarily as a teaching tool (de la Cuesta, 1983; Donabedian, 1988). Most of the theorists described and discussed the nursing process. Roper, Logan and Tierney established four stages (assessment, planning, implementation and evaluation), (McKenna, 1997). It was in the 1970s when the current five-stage nursing process adding the nursing diagnosis stage (assessment, nursing diagnosis, planning, implementation and evaluation) were established and the concept was transferred from the educational setting to clinical practice (Meleis, 2007:475). Differences between UK and USA contexts may explain the divergence in nursing process view. In the UK nursing process was seen more in terms of a method to improve quality of care, whereas in the USA it was seen more as a systematic process for the delivery of nursing care. Application of the nursing process discipline qualifies as a discipline's professional response (Marriner, 2006).

The nursing process is the tool that makes nursing theories work. Without a theory practicing nurses did not know who, when, why or what of each stage (McKenna, 1997:164). The nursing process thus becomes the methodology that guides the applications of concepts and values within the nursing models and theories. In Spain the

situation was very different than in USA and UK. In 1950 Spanish nurses had only technical background training. It was only in 1977 when nursing became a discipline within the Universities. This represented a rebirth of nursing, with input from international nursing theories, nursing process, nursing research and all the circumstances that were implicit within nursing knowledge. This is the context during that period in Spain and helps to understand the differences in the evolution of nursing in these two countries. The nursing discipline became based on nursing science generated from nursing research and on nursing profession whose key focus in nursing practice is understood as the interrelation between conceptual (models and theories nurses), methodological issues (the process of nursing care) and instrumental elements to measure the impact of nursing interventions. In 1994 McKenna established a positive relationship between the quality of care delivered and the nurses' practice performance based on theoretical foundations. He found that '*the quality of care given by a practitioner using a theory is high because practice is built on a systematic knowledge base'* (McKenna & Slevin, 2008). This is food for thought, because unfortunately the studies provide little information on the conceptual framework that guides nursing practice considered in the study and sometimes theories and findings may conflict leading to difficulty in interpreting results and comparing studies (Ingersoll & Mitchell, 1999). At that point another important aspect to consider is the differences between novice and expert nurse which may explain some of this variation (Benner, 1982).

It is important to highlight that the major nursing functions that directly affect patient safety are: monitoring patient health status, performing therapeutic treatments and integrating patient care to avoid gaps in healthcare (Aspden et al., 2004:162). As Hinshaw (2008) stated, when transforming the work environment of nurses for patient safety, it means changing the care processes and procedures and workplace design for patients and families. These major functions that protect patient safety require an adequate number of well-prepared nursing staff.

2.5. Chapter Summary

The chapter set out to provide an overview of key and relevant literature and provide background to significant concepts for this PhD, especially the notion of safety. It has explained and justified the use of Donabedian's Quality Framework in addition to showing that health care quality, and patients' outcomes and safety are both central, but not exclusively, to the nursing profession. Moreover it is clearly stated that these issues allow nurses to build on who nurses have been and also provide a strong foundation for

future thinking and research (Salmon, 2007). Some variables have been shown to influence in the achievement of a high level of quality care and therefore should be analysed and to establish their impact on patient outcomes. To advance nursing science, it is necessary to have, as Talsma *et al.* (2008) recommend, a business model for nursing that links staffing, performance on quality measures, and patient safety.

The problem of ensuring safe and high quality patient care in organisational setting is complex (Mark et al., 2004; Ball, 2011). The first step is to explain why empirical relationships occur, then formulate quality indicators and also predict conditions under which these relationships are more or less likely to occur given the reliability of the data (Mark et al., 2004; Ball, 2011). Several research studies are available but gaps remain (Lichtig et al., 1999; Pronovost et al., 2001; Aiken et al., 2002; Kovner et al., 2002; Rafferty et al., 2007). It is essential to know what works, for whom, when, where (in what circumstances) and why it might work, and from whose perspective (Long, 2006). Only through this approach, do nurses have the potential to contribute to answering this complex problem and build new knowledge.

<div align="right">**Chapter 3**</div>

Literature review: A concept analysis of the 'outcomes of nursing practice'

3.1. Introduction

Over the past few years several organisations and many authors have tried to address the challenge of defining the meaning of 'outcomes of nursing practice' (or, alternatively phrased, as 'nursing practice outcomes'). Clarifying this meaning is important because it allows identification of the effects of nursing care on patients' health status. There is no easy or simply stated definition of nursing practice outcomes but as reflected in clinical practice, nurses are the health care professionals who spend most time engaged in direct patient care. Therefore, it is appropriate to verify that what nurses do could potentially have important effects on patient outcomes as well as on the quality of health care. The acceptance of how nursing care impact on patients' outcomes is heavily reliant on a professional understanding of what is meant by the outcomes of nursing practice concept. Accordingly a concept analysis of 'outcomes of nursing practice' was carried out in order to offer an operational definition to guide this PhD, define what the study is looking for, what it was measuring and aid interpretation of study results.

Building on Chapter two's clarification of the core concepts of quality, safety, outcome and nursing care, this Chapter describes from several perspectives the concept of 'outcomes of nursing practice'. To provide a considered standpoint on the question of what outcomes might, at least potentially, be 'sensitive' to nursing care interventions, three approaches are used. The first involves reviewing nursing theorists' definitions of the goals of nursing. The second examines definitions of nursing-sensitive outcomes and interpretations that have been provided about outcomes of nursing practice. The third draws on findings from a systematic review of literature (Subirana et al., 2010:43), exploring research evidence on nurse staffing, skill mix and patient outcomes. This is then summarised in an overview of measures or indicators used in research studies of outcomes and indicators sensitive to nursing care interventions and associated rationales for their choice. This third approach is considered to be of interest because staffing-outcomes research has been seen as a great challenge for nurses over the last decade and of the vital importance for patients' safety and outcomes (Clarke, 2009). Moreover this analysis of reported outcomes will allow thinking and clarifying as to where staffing-

outcomes research needs to focus and to aid understanding of how nurse interventions impinge on patients' outcomes and safety.

The next section provides an overview of different concept analysis approaches focusing on what is done in this work. The chapter then moves on in subsequent section aim to explore the question of what outcomes are, examine types of outcomes and illustrate what it is meant by outcomes of nursing practice. The Chapter concludes with a summary overview of aspects of nursing care and potential outcome indicators, themselves located within a wider structure-process-outcome framework (Donabedian, 1966).

3.2.   Concept Analysis Approach

The first approach to concept analysis described by Wilson in 1963, was used as the basis for successive concept analysis methods within the field of nursing such as those described by Walker and Avant in 1983, by Rodgers in 1989 and by Chinn and Kramer in 1995 (Rodgers, 1989; Beckwith et al., 2008; Risjord, 2009). According to Watson (1991), concepts are the blocks upon which theories are built whereas Paley understands concepts as theory niches, denoting that the meaning of a concept is made specific when it becomes part of a explicit theory (Paley, 1996; Cutcliffe & McKenna, 2005b:350). Morse (1995) noted that to provide a deeper understanding about the concept under analysis, methods used must be based in qualitative inquiry techniques. Morse therefore proposed a further modification to Chinn and Kramer's adaptation of Wilson (Morse, 1995; Morse et al., 1996; Beckwith et al., 2008).

Thirteen named concept analysis frameworks were identified by Beckwith (2008) in an analysis of the nursing literature published between 1991 and 2005. One can infer that many of these frameworks are modified, unjustified or hybridised versions of each other; furthermore those using Wilson's method of concept analysis fail to produce a useful theoretical base to underpin the complexity of nursing practice (Morse, 1995; Beckwith et al., 2008). One reason to explain this is that they only considered the empirical component involved in caring, and thus did not provide a complete assessment of the concept. These poor attempts to produce a concept analysis of the nursing literature, probably explain why there is no unanimously accepted approach (Cutcliffe & McKenna, 2005b:350).

The different methods of conceptual analysis can be categorised as quantitative or qualitative approaches. Traditional methods (quantitative) involve linear stages and a

static view of the concept while untraditional strategies (qualitative) lead to a dynamic cycle that influences the significant, used and applications (McKenna & Cutcliffe, 2005:10). It is interesting to note that of the twenty concepts analyzed in McKenna and Cutcliffe's edited book, most of the authors' follow the original method of Walker and Avant. Risjord (2009) also reviewed concept analysis methods. Briefly, two new forms of concept analysis were identified; theoretical and colloquial, differentiated according to their scope and evidence. While the theoretical method is based on scientific literature, in contrast the colloquial method as its name implies is based on colloquial usage in the literature, relying on a broader range of usage. This approach is of interest because colloquial analysis may help to identify the complexity of nursing practice and become complementary when it is used together with theoretical approach. Consequently this means that concepts may be developed as part of larger theories as supported by many authors (Paley, 1996; Cutcliffe & McKenna, 2005b:350; Risjord, 2009). Moreover it reinforces the importance of the context in concept analysis, becoming crucial when articulating meaning thus concepts cannot exist without the context (as knots cannot exist without the cord) (Risjord, 2009).

Considering the above concept analysis methods, this work partially followed Morse's (1995) method to explore, facilitate and unfold a better understanding of 'outcomes of nursing practice'. She recommended three consecutive steps: identifying the attributes, verifying the attributes and identifying manifestations of the concept. The first and second steps are developed in the following sections to illustrate the analysis of outcomes of nursing practice while the third, as it overlaps with the objectives of this PhD, is brought together in Chapter Ten.

3.3.   Identifying the Attributes

This section begins by examining what is meant by the term 'outcome' and continues by exploring the notion of 'outcomes of nursing' and the concept of outcome within nursing theories. The goal is to achieve a definition and understanding of 'outcomes of nursing practice', as outcomes that are 'sensitive' to nursing practice interventions, which will inform this PhD.

3.3.1. Types of Outcomes

Outcomes in health care must provide a comprehensive picture of the possible effectiveness of specific interventions. Within outcomes of nursing, the purpose of measurement and the uses of the outcomes information will determine which and whose

desired outcomes are prioritised for measurement and when (Marek, 1989). The critical starting point is the identification of desired outcomes of key participants in the intervention. It is important to consider what is socially and economically acceptable and the goals for the treatment and care provided by each member of the clinical team, as they evolve over time (Gallagher & Rowell, 2003; Newhouse, 2010). Associated outcome criteria and indicators of success, will be based on the desired outcomes (Marek, 1989; Long & Jefferson, 1999; Kristensen et al., 2009).

The complexity of the issues related to outcomes of nursing practice needs some clarification. Firstly, there is complexity in relation to what counts as an 'effective' intervention. Secondly, there is complexity arising from the multiplicity of different perspectives on what counts as a 'successful' outcome. Both 'effective' and 'successful' are often not accurately identified. Although outcomes of nursing practice need a 360 degree perspective, a major priority in current healthcare policy and practice is one which prioritises the patient's perspective, in short, patient preference and patient experience in relation to nursing care (Holzemer & Henry, 1999:193-195; Lavin et al., 2007; NHS, 2010; Royal College of Nursing, 2010b). Thirdly, there is complexity about the timing of measurement - when is the best moment to measure the achievement of outcomes, short versus longer term. Of relevance here is the need to take notice of the structure and process issues that may influence their achievement (Donabedian, 1966; Long, 1999); the longer the period of observation the greater the number of variables that may impinge on the link between interventions and outcomes (Lohr, 1988). Owing to the complexity about linking interventions and outcome the time chosen for outcome measurement becomes crucial (Holzemer & Henry, 1999:193-195). Measurements may be continuous throughout the individual's period of ill-health (3, 6, 12 days or even months), and always there is the need for a baseline. For an acute condition the measurement process will be more restricted (Long, 1999; Kolcaba et al., 2006). Fourthly, there is complexity in relation to the lack of normative data (Holzemer & Henry, 1999:193-195) with only few exception (Hannah et al., 2009; Shuldham et al., 2009), to systematically record patients' outcomes make it difficult to provide data on patients' outcomes at ward level and as a consequence prevents formulation of a more focused picture about outcomes of nursing practice.

In measuring outcomes of nursing practice, it also becomes important to take into account the difficulty of assessing the impact of a single discipline (nursing) on patients' outcomes but in a context of a multidisciplinary, patient-focused care environment (Doran, 2003; Nelson, 2011). This raises the challenge, and an additional source of complexity, of

how to separate nursing effects from other disciplines' effects. Yet other challenges arise in the data collection and analysis area. For example, patient risk adjustment must be considered in order to identify and avoid the effect of specific patients' characteristics on the outcomes under analysis (Wu, 1995; Harless & Mark, 2010). It is also very supportive to establish a systematic framework of key questions about who are the participants, what are the desired outcomes and which ones are needed for measurement, what data is collected and the uses of this data, when, what and how often, and finally identity what kind of instruments are available and what setting the data is collected in (Long, 1999; Long & Jefferson, 1999; Nelson, 2011).

Based on two literature reviews (Mitchell et al., 1998; Suñol et al., 2009), Figure 3.1 has been drawn up to show five different types of outcomes. Its aim is to develop an understanding of the meaning of 'outcome' within the nursing discipline. It depicts different types of outcomes relating to patients, healthcare professionals, healthcare system. From the interaction of patients, health care professionals and health care system different types of outcomes are identified. Outcomes from the interaction between patient and health care system are system outcomes. Outcomes from the interaction between patients, health care professionals and health care system are labelled as patients' outcomes; when these outcomes are a consequence of nursing interventions is they are referred to as outcomes of nursing. Finally, the outcomes from the interaction between health care system and health care professionals are named staff outcomes and, where the professionals are nurses outcomes are labelled as nursing outcomes.

The outcomes for an individual can be improved health status, health-related quality of life (HRQoL), maintenance, managed/planned deterioration, each positive in the particular circumstances; they could also be negative such as adverse events, problematic consequences of the treatment (e.g. adverse drug reactions) or of poor care. The instrument used to measure, taking as an example HRQoL, needs to prioritise the views of the individual in order to adequately reflect this outcome (Greenhalgh et al., 2005). When considering the more recent available evidence regarding the relationship between staff characteristics as an element of structure category and outcomes, negative outcomes such mortality, falls, infection rates remain the outcomes more frequently reported in the nurse staffing literature as they are easily available in medical records and in administrative data sets (Estabrooks et al., 2011; Gershengorn et al., 2011; Li et al., 2011; Needleman et al., 2011).
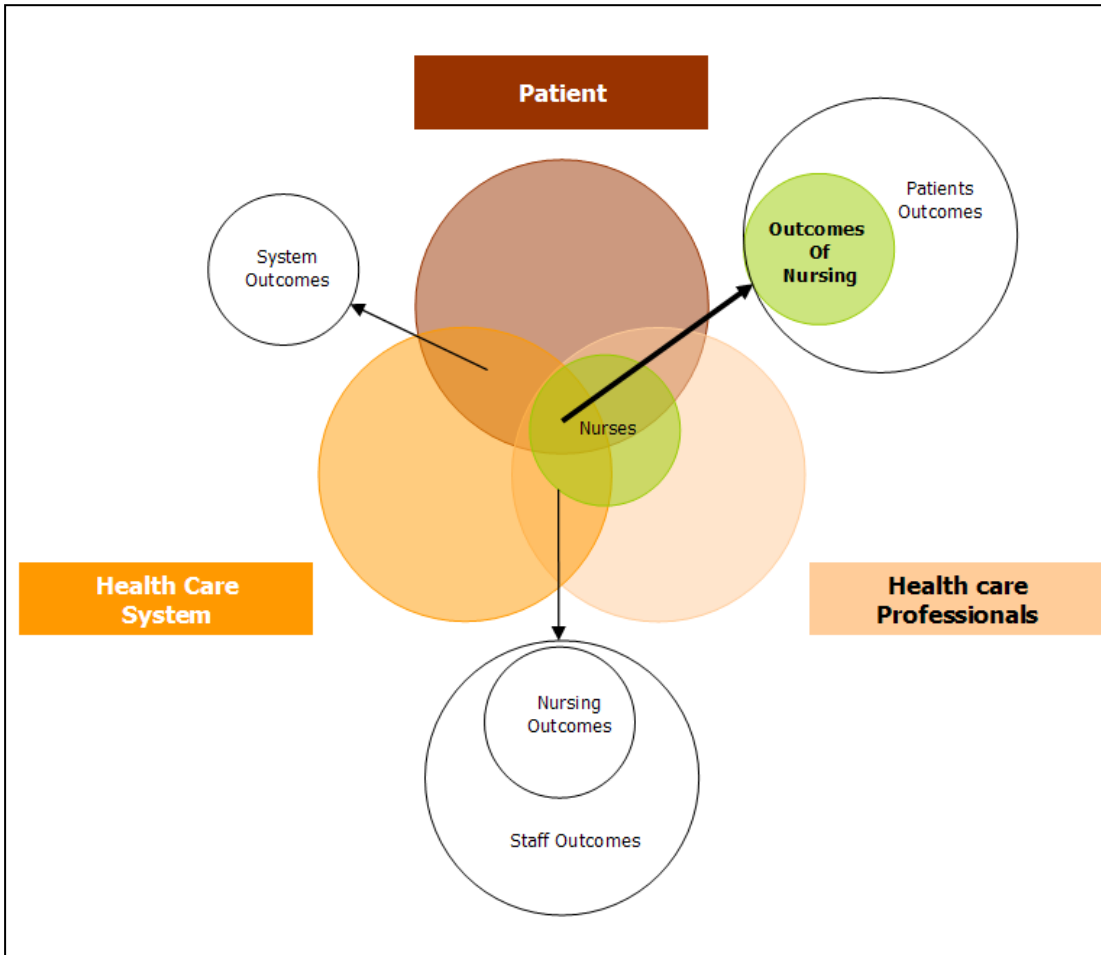
Figure 3.1: Types of Outcomes

On the other hand, but less frequently reported are the positive outcomes such as patient satisfaction. When considering positive and negative outcomes dimensions, it should not be forgotten that the lack of negative outcomes is also an outcome to be considered (Kolcaba et al., 2006). Moreover there must be previous knowledge of the link between structure and process and outcome before the measurement can be done and attribution assured (Donabedian, 1988). The difficulty is that the knowledge that informs this relationship comes from organisational sciences, and because the evidence to support this relationship is weak and it is sometimes very difficult to demonstrate that structure and process lead to specific outcome.

3.3.2. Outcome Concept in the Context of Nursing Theories

In seeking to elucidate the attributes of the outcomes of nursing practice, it is necessary to analyse the range of nursing theories that could be adopted into current nursing practice. According to their level of abstraction, three types of theories emerge in nursing; *grand theories* which provide relationships between a large number of abstract

concepts; *middle range theories* in which concepts are more specific and can be readily operationalised and *situation-specific theories* that focus on specific nursing phenomena and are limited to a particular population or field of clinical practice (Meleis, 2007:43). In this context, the notion of nursing theories includes all three types and although it is not the aim to specify each type, it is important to appreciate the distinction in order to understand the implication it has for outcome measurement.

Another important issue to consider is the school of thought in which nursing theory is situated. Meleis (Meleis, 2007:109-132) analysed the evolution of nursing theories identifying four schools of thought or main themes. These include needs-based, interaction and outcomes theories developed between 1950 and 1970, with being/caring theories emerging in the 1980s. Newman *et al.* (1991) provide a step further when analysing paradigms that guided nursing theories research when they identified three perspectives, particulate-deterministic (1850-1950), interactive-integrative (1950-1975), and unitary-transformative (1975 to present).

Depending on the nursing theory adopted, different types of outcomes emerge. From the particulate-deterministic perspective, relationships within and among entities are viewed as linear and causal; from the interactive-integrative perspective, phenomena are viewed as having multiple, interrelated parts in relation to a specific context, in short reality is assumed as multidimensional and contextual. In the unitary-transformative perspective, a phenomenon is identified by pattern and by interaction with the larger whole; this perspective represents a significant paradigm shift (Newman et al., 1991). Tables 3.1 and 3.2, adapted from Kérouac (1996:25) and Meleis (2007:109-132), present the schools of thought, research paradigm in which the theorists were based as well as the paradigmatic origins. It also reports the most significant nurse theorists and the goals of nursing from those four different approaches in which nursing practice could be based. Nursing theories proposed by nurse theorists as presented in Tables 3.1 and 3.2 remain and subsist together in current nursing practice.

Goals of nursing in the context of practice constitute the desired outcomes on which stages of nursing process are based; they are something to strive for while in contrast outcomes are predictors of end-performance (Parse, 2006) becoming specific, dynamic and different according to each patient's achievements. Nursing theories constitute the basis for nurses' judgments and for decision making in nursing practice and have

implications in care delivered an as a consequence on outcomes (Field, 1987; Cotterill-Walker, 2011; Tonges & Ray, 2011; Wells et al., 2011).

Table 3.1: Goals of Nursing in Nursing Theories from 1950 and 1970

SCHOOL OF THOUGHT / *Paradigmatic origins* Research paradigm	Theorist	Goals of nursing
NEEDS-BASED *Maslow (Hierarchy of needs)* *Erickson (Stages of development)* *Medical model* **Interactive-integrative**	Abdellah (1960)	Help individual meet health needs and adjust to health problems
	Henderson (1955)	Completeness or wholeness and independence of patient to perform daily activities
	Orem (1959)	Eliminate deficit between self-care capabilities and demand
INTERACTIONIST *Freud (Psychoanalytical theory)* *Fromm (Psychological theory)* *Jung (Analytical psychology)* *Frankl (Logotherapy)* *Hussserl; Heidegger (Phenomenology)* *Nietzsche (Existentialist philosophy)*	Peplau (1952)	Develop personality, making illness and eventful experience. Forward movement of personality and other ongoing human processes in the direction of creative, constructive, productive personal and community living
	Paterson and Zderad (1961)	Develop human potential, more well-being for both patient and nurse
	Orlando (1962)	Relieve distress, physical and mental discomfort
	Travelbee (1964)	Cope with an illness situation and find meaning in the experience. Assist patient to accept humanness
	Wiedenbach (1965)	Meet the needs of an individual experiencing need for help
Interactive-integrative	King (1968)	Help individuals maintain their health so they can function in their role
OUTCOMES *Rappoport; Chinn; Buckey (Systems theory)* *Helson (Adaptation theory)* *DeChardin & Bernard Marx (Marxist philosophy)*	Johnson (1958)	Behavioural system balance, subsystems that function efficiently and effectively
	Levine (1967)	Conservation of energy and integrities, restoration of well-being and independent activity. Nursing is conservation of energy and integrities
	Rogers (1970)	Promote symphonic interaction and harmony between man and environment. Strengthen coherence and integrity of human field
Interactive-integrative	Roy (1971)	Promote person's adaptation in physiologic needs, self-concept role function and interdependence

The need-based theories are based on Maslow's hierarchy of needs and influenced by Erickson's stages of development. They aim to meet the needs of clients and were developed in response to such questions as: what do nurses do? what are their functions? And what roles do nurses play?. For instance within these theories, nurses contribute to help individuals meet their health needs (Faye Abdellah), to gain independence (Virginia Henderson) and promote the goal of patient self-care (Dorothea Orem). According to Henderson (1978) nurses have a major contribution to play in helping the patient '(re)gain independence. Needs-based theories focus on the patient's problems and needs; when

major needs are met, other more mature needs may emerge. As Meleis (2007:111-114) notes, safety needs are included in this perspective.

The interaction theories, although they did not totally ignore the first set of questions, focused on how do nurses do whatever it is they do?. This view of nursing is as an interpersonal process with the focus on the development of a relationship between patients and nurses and illness as an experience (Meleis, 2007:114-119).

The outcomes theories, without ignoring the what and how questions, attempted to conceptualise the outcomes of nursing care answering the 'whys' of nursing care and then described the recipient of care providing a well-articulated conception of human being. However the use of these theories in outcomes measurement is limited due to the outcomes considered such as: harmony with the environment, stability, conservation of energy or homeostasis; all are at high level of abstraction (Meleis, 2007:119-122).

Finally in the caring/becoming theories, which evolved from interaction theories, the process of caring occurs between two independent human beings. Decision-making, unlike the previous schools, is mutual between health care provider and client (Meleis, 2007:109-132).

Table 3.2: Goals of Nursing in Nursing Theories emerged in 1980s

SCHOOL OF THOUGHT / *Paradigmatic origins*	Theorist	Goals of nursing
CARING -BECOMING *Freud (Psychoanalytical theory)* *Fromm (Psychological theory)*	Watson (1979)	Mental and spiritual growth for human beings, finding meaning in one's own existence and experience
Heidegger; Sartre; (Existential-Phenomenology) *Hegel's (Dialectical model)* *Nietzsche (Existentialist philosophy)*	Parse (1981)	Co creating meaning and finding ways of being. Transforming through co constituting new ways in deliberate ways through the human universe process
	Benner (1982)	Caring practice whose science is guided by the moral art and ethics of care and responsibility
Unitary-transformative	Leininger (1985)	Provide care congruent with cultural values, beliefs, and practices

Each school of thought comprises substantive knowledge of the nursing discipline (Parse cited inBarrett, 2002). As nursing is a practice discipline, such theories directly impact on nursing practice, most commonly and explicitly in structuring the assessment of the patient on admission in order to plan and guide nursing actions (McKenna & Slevin, 2008:1-61). Which desired outcomes (goals of nursing) are tacitly and/or explicitly focused upon will depend on the underpinning theory or theories of nursing that informed the nurses' training and have been adopted by the health care setting in which nurses care.

Nursing theories may however lie implicit within the nurse's knowledge and word base, forming part of the tacit knowledge informing care (Carper, 1978; Radwin & Fawcett, 2002).

The analysis of the outcome concept in the context of nursing theories suggests that the selection of 'which' outcomes as the focus of attention depends on the theory informing practice and the way that this theory is implemented, in particular how it is followed throughout the operation of the nursing process. At the same time, it is important to highlight that outcomes from nursing interventions and/or sensitive to nursing are one part of the wider outcome experienced and achieved by the patient. These outcomes are affected by all the other parties involved in the patient's care, including informal (family or other) carers. Yet another linked factor here is the mutual understanding of the roles played by the different health professionals in the care of the patient (Henderson, 1978). Moreover, all of the above is situated within the wider safety and quality environment and the culture in which nursing care is provided.

3.4. Verifying the Attributes

In this section, based on the previous discussion of the different perspectives of nursing theories, the question of what is considered to be an outcome within the context of nursing practice is reviewed. In this context, to enhance clarity and avoid confusion it is necessary to differentiate between goals, indicators and outcomes. In short, patients' goals are something to strive for, indicators are signs of progress toward achievement of something while outcomes are end-states or end-results and predictor of end-performance (Parse, 2006). Within the assessment of healthcare quality, a broad definition is considered for each of these concepts. For instance, a goal describes a quality improvement objective which is being incentivised and may be measured using several indicators (Deparament of Health, 2010). An indicator is a measure which determines whether a goal or an element of the goal has been achieved whilst an outcome is a measurable change in health status (Deparament of Health, 2010). In the next subsection the pertinent literature in relation to outcomes of nursing is reviewed.

3.4.1. Definitions of Outcomes of Nursing According to International Organisations and Researchers

Florence Nightingale's original work in the Crimean War constitutes the earliest measurement of effectiveness in health care which used mortality and morbidity as an

outcome of nursing. Although nursing care has evolved, mortality is still associated with nursing outcomes (Lang & Marek, 1991). Internationally, at a conceptual and theoretical level, there is substantial agreement of the meaning of the term, 'nurse-sensitive outcomes'. Marek (1989:3) defines a nursing-sensitive outcome as a *'measurable change in a client's health status related to the receipt of nursing care'*.

The International Council of Nursing (ICN), in the International Classification for Nursing Practice (ICNP), states that a nursing outcome is the *'measure or status of a nursing diagnosis at points in time after a nursing intervention'*. It further defines nursing-sensitive outcomes as *'changes in health status upon which nursing care has had a direct influence'* (International Council of Nurses, 2001:1). The main difference between the two definitions is that in the first, nursing outcomes are derived from nursing interventions performed within the nurses' independent role, while the second, direct influence can be brought from interventions within the independent or interdependent role.

In 1995, the American Nurses Association's (ANA), identified six areas of patient outcomes to consider: mortality rate, length of stay, adverse incidents, complications, patient and family satisfaction with nursing care and patient adherence to the discharge plan; only the last two can be directly attributed to nursing care from the independent role (American Nurses Association, 1995). A year later nursing quality indicators, definitions and implications were established. The initial set of indicators included: falls, falls with injury, nursing care hours per patient day, skill mix, pressure ulcer prevalence, and hospital-acquired pressure ulcer prevalence. The National Database of Nursing Quality Indicators™ (NDNQI®) was developed and in addition to the above indicators included RN surveys (job satisfaction and practice environment scale), RN education and certification, paediatric pain assessment cycle, paediatric intravenous infusion rate, psychiatric patient assault rate, prevalence of restraints, nurse turnover and healthcare-associated infections. This database currently provides within six weeks timely reports on patient outcomes and nursing staffing (Montalvo, 2007).

In the University of Iowa, to evaluate nursing care at the unit level, Johnson and Maas from the Centre for Nursing Classification and Clinical Effectiveness define an outcome *'as a measurable individual, family, or community state, behaviour or perception that is measured along a continuum and is responsive to nursing interventions'* (Moorhead et al., 2008:44). Based on this definition, the Nursing Outcomes Classification (NOC) has been developed as a comprehensive, standardised classification of patient/client

outcomes with the goal of evaluating the effects of nursing interventions. The outcomes are organised into categories, referred to as classes. These classes are grouped into seven broad domains: functional health, physiologic health, psychosocial health, health knowledge & behaviour, perceived health, family health and community health (Moorhead et al., 2008).

When defining the term nurse-sensitive outcomes, the relevant outcomes are considered to be those that are interconnected to specific patient problems or situations (Verran, 1996:327). Needleman and colleagues gave a more concrete description when they used the phrase *'outcomes potentially sensitive to nursing'* which recognised nursing contributions in the clinical care delivery process (Needleman, 2001). Spilsbury and Meyer (2001), reviewed the nursing contribution to patient outcomes and stated that experimental evidence is not always available because of the difficulty of capturing the complex and invisible aspects of nursing care. Attempts being made to capture these invisible aspects of nursing care include interventions such as coordination of care, managing bureaucracy, providing leadership and clinical judgement (Spilsbury & Meyer, 2001).

In Canada, Doran (2003) reviewed nursing-sensitive outcomes and stated that they are guided by two frameworks. The first one is the Nursing Role Effectiveness Model described by Irvine in 1998 (Irvine et al., 1998), and the second a measurement framework described by the same authors (Sidani & Irvine, 1999). The outcome variables selected in Doran's model are classified into four groups; clinical outcomes (symptom control); functional outcomes (physical and psychosocial functioning and self-care abilities); patient safety outcomes and perceptual outcomes (satisfaction with nursing care) (Doran, 2003). Doran's review was the basis for the development of the C-HOBIC model which allows systematic capture of standardised nursing-sensitive clinical outcomes data (Hannah et al., 2009). The outcomes measured across all sectors of the Canadian healthcare system are: functional status, pain, fatigue, dyspnea, nausea, falls, pressure ulcers and readiness for discharge. Data for these outcomes are collected using standardised tools (Hannah et al., 2009).

In Europe although the incidence and prevalence of negative outcomes in relation to patient safety remains unknown, it is necessary to highlight the recently established patient safety indicators which are recommended for institutional-level use. The use of

these indicators promotes systematic monitoring that in the short term will guarantee that data regarding negative outcomes are available (Kristensen et al., 2009).

In the UK, the Royal College of Nursing (RCN) (2004b), stated that nurses needed to be able to define and measure their unique contribution. They argued that desired outcomes in continuing care cannot be based on measures such as morbidity or disease rates (Royal College of Nursing, 2004b), and suggested that the outcomes of care should be judged by assessing patients' quality of life. Rather than using more global measures such as changes in morbidity or disease rates, measures should address intended changes in patient health status (or intended, maintained, or managed deterioration in, levels of ill-health), as a result of the care given by the nurse and in relation to a timescale during which any change should occur. At the same time, the question of confounding may arise. For example, pressures on hospital beds or targets on throughput and length of stay may lead to earlier discharge and thus reduce the time period during which the 'effect' of nursing care can be explicitly realised or become assessable. In 2006, the RCN (Royal College of Nursing Policy Unit, 2006) provided patients with the evidence about the impact of nurses on clinical outcomes in order to guide their decision making about health provider choice and in 2010 outlined their position on evidence-based nurse staffing levels (Royal College of Nursing, 2010a). Workplace culture and the care context established through leadership are key factors that influence patient outcomes and staff wellbeing (McKenzie & Manley, 2011).

Outcomes should measure changes in patient health status as a result of the impact of nursing care. Of particular interest is the measure of nurses' contributions to patient experience and patient outcomes such as wellbeing. According to KCL policy+ publications, nurses are in a powerful position to improve health outcomes (King's College National Nursing Research Unit, 2008b) and consequently nurse-sensitive outcomes can be identified. At the same time, there is the danger of creating perverse incentives when trying to demonstrate high levels of performance. Failure to rescue, hospital acquired pneumonia, pressure sores, falls, workforce planning and patient and staff experience are areas for indicator development in acute care (King's College National Nursing Research Unit, 2008a) which is the care setting in which most outcomes indicators have been developed (King's College National Nursing Research Unit, 2010). Available evidence does not allow drawing conclusions on the observed associations between nurse staffing and outcomes although low registered nurse staffing levels should be considered a risk factor

for poor quality care (King's College National Nursing Research Unit, 2009; Royal College of Nursing, 2010a).

In Spain, the Ministry of Health, the General Nursing Council and the College of Accreditation for the Development of Nursing and other Health Sciences, within the NIPE project, established a framework to define the scope and the contribution of nursing to improve people's health. This project was established as a result of nursing professionals demanding an established system for the assessment of continuous quality improvement (CQI) in nursing care in order to (1) provide better care, (2) agree on a system to control the costs of nursing care and (3) demonstrate nurses' contribution to the health system. The project aims, as a priority for nursing research, to standardise nursing practice and explicitly link safety, quality and outcomes together (NIPE, 1997). In 2004 it involved around 2.500 healthcare professionals and 140 health centres[1].

At this point it is also interesting to analyse the concept of 'nursing outcomes' that comes from CINAHL database since 1993. The 'Nursing Outcomes' subject heading is defined as '*Changes in the health status of clients as a result of nursing care'*, and included 'outcomes, nursing', 'nursing outcome' and 'outcome nursing'. When reviewing evidence from papers that established a relationship between nursing and patient outcomes, only a few included an explicit definition of what the authors understood as a patient outcome related to nursing; moreover, the majority talked in term of the label of nursing outcomes. Based on different international organisation definitions for nursing outcome, Table 3.3 shows nursing sources, terms used to refer to outcomes of nursing practice and the way that this outcome it is expressed. Table 3.4 summarises outcomes of nursing attributes and provides the analysis of the components upon which definitions are built. To establish the link with sources of outcomes reported in Table 3.3, the first column in both Tables indicates the source code.

Table 3.3: Sources, Concepts and Expressions of Outcomes of Nursing Practice

Source Code	Source	Concept	Express as:
1	ICN (2001)	Nursing outcome	Measure or status
2	ICN (2001)	Nursing-sensitive outcomes	Changes
3	ANA (1990)	Outcome	End results
4	NOC (1991)	Outcome	Measurable
5	RCN (2003)	Outcome	(Those) changes favourable or adverse
6	CINAHL (1993)	Nursing outcomes	Changes

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[1] Proyecto NIPE, accessed 7 February 2011.
    http://www.nipe.enfermundi.com/servlet/Satellite?cid=1075192228048&pagename=NIPE%2FPage%2Fplantil la_novedades_detalle&idNovedad=1084174174766

Table 3.4: Attributes of Outcomes of Nursing Practice

Source Code	Of whom?	Of what?	How to measured?	When?	Attributed to what?
1			(of a) nursing diagnosis	at points in time (after a)	nursing interventions
2		(in) health status			(upon which) nursing care (has had) a direct influence
3		(are indicators) of problem resolution or progress		and toward problem or symptom resolution	nursing interventions
4	individual, family, or community	state, behaviour or perception along a continuum	(that is measured)		(and is) responsive to nursing intervention
5	of persons, groups, or communities	(either in actual or potential) health status			(can be attributed to) prior or concurrent care
6	of clients	(in) health status			(as a) result of nursing care

- ICN: Nursing outcome: The measure or status of a nursing diagnosis at points in time after a nursing intervention (ICNP) (International Council of Nurses, 2001).

- ICN: Nursing-sensitive outcomes: Changes in health status upon which nursing care has had a direct influence (International Council of Nurses, 2001).

- ANA: Outcomes define the end results of nursing interventions and are indicators of problem resolution or progress toward problem or symptom resolution (American Nurses Association, 1995).

- NOC: Nursing sensitive patient outcome: A measurable patient or family state, behaviour or perception that is influenced by and sensitive to nursing interventions (Moorhead et al., 2008).

- RCN: Outcome: Those changes, either favourable or adverse in actual or potential health status of persons, groups, or communities that can be attributed to prior or concurrent care (Royal College of Nursing, 2003b).

- CINAHL: Changes in the health status of clients as a result of nursing care.

When analysing in detail the outcomes definitions, it is identified that the word nursing-sensitive is used once and the word 'sensitive' is being used as equivalent to meaning 'direct' nursing influence. It that case, it is implied that an outcome will be more sensitive (to nursing) when changes in health status are more directly influenced by nursing care or can be attributed to previous or immediate care. Accepting that nursing care is an intervention from the independent role, therefore, an outcome can become

more or less sensitive to nursing depending on the weight of the nursing independent role in relation to the nurse as part of a team, that is, in her interdependent role.

Irvine *et al.* (1998) reported three role functions to be considered within the process category. The first is the nursing's independent role which concerns itself with the role functions and responsibilities for which only nurses are held accountable such as patient education, assessment activities, decision-making, intervention, and follow-up based on nursing process. In the second, nursing's collaborative or nursing medical care-related role functions, nurses assume functions and responsibilities associated with the implementation of medical orders or treatments, for instance orders regarding assessment of weight, urine control, and/or blood sugar levels. Finally, in the third, nursing's interdependent role is related to the activities and functions in which nurses are partially or totally dependent on the functions of other providers of health care, for example, when promoting continuity and providing care coordination. Within the Spanish nursing care context, these three roles converge into two. On the one hand, there is the independent role and on the other the collaborative role which includes nursing's collaborative or nursing medical care-related role functions and their interdependent role.

When considering the way in which an outcome is expressed, very divergent words are used: changes, end results and measurable. Measure or measurable implies at least two recording points (at least asking the patient retrospectively about their health status now compared to before). If there are two points of measurement (that is, before and after), the value of the outcome, considering a quantitative variable, can increase, decrease or remain at the same level. The same rationale applies when analysing the word change. In that case, at least two points of quantification are always needed and the value can only increase or decrease, but not keep to the same level because it is a change. Only in the RCN definition is the direction of the change stated and this can be favourable or adverse (Royal College of Nursing, 2003a).

Another important point arising from Table 3.4 regarding attributes of outcomes of nursing practice is the subject of the action, mentioned only in three of these six definitions. The first (source nº4), clearly specified, individual, family or community; the second (source nº5), indicated persons, groups, or communities and in the third (source nº6), the focus lies on clients. Outcomes are the states of the individual, family or group which vary and can be measured and compared to previous measurements.

Health status is the end point of all definitions and is explicit in three and implicit in the ICN nursing outcome definition. Others end points are problem resolution or progress, state, behaviour or perception which, according to Donabedian (1988) are included in the health status concept. In the ICN definition, the measure or status of health is measured through nursing diagnosis whilst in the NOC definition the measure is along a continuum.

All the definitions specifically attribute the outcome as a consequence of nursing care, more generally, and prior or current care, or a nursing intervention, more specifically. When considering that point, Nightingale's comment that the elements of nursing care are all but unknown (Nightingale, 1859/1992:8) reinforces the difficulty of trying to identify nursing specific contribution to patient outcomes and how sensitive these outcomes are in relation to the nursing care. Nowadays this point needs to be made clear.

Any definition needs to allow for a positive, negative and steady state in relation to the goals set for the patient within the nursing care process. It must allow the possibility of before and after and retrospective assessment. Furthermore, as well as considering the efficacy and effectiveness of an intervention, it must also consider the appropriateness to the particular user (Long, 1999; Long, 2006), specially when dealing with the management of chronic conditions as in this situation individuals' needs and requirements are personal and unique, particularly for people with disabilities and a need for long term care (Long & Jefferson, 1999) or when their process is exacerbated and requires acute care.

Nursing can also have a significant effect on the outcomes of specific groups of patients, particularly in preventing not only adverse events but the lasting effects of comorbidities and symptoms (Simmons, 2010; Estabrooks et al., 2011). Whilst this study focussed upon an acute care, there is an increasing need for research that examines outcomes over time and across different care contexts as hospital admission times shorten and community based nursing care increases.

3.4.2. Outcomes Reported in Staffing-Outcomes Research Studies

There is a large body of evidence which explores the links between nurse staffing and the structure and process variables that influence patient outcomes (Lang et al., 2004; Pearson et al., 2006; Griffiths et al., 2009; West et al., 2009; Richardson & Storr, 2010; Subirana et al., 2010; Butler et al., 2011). To attempt to draw evidence together, and situate the material within the context of the Spanish health care system, a systematic review (funded by *Fondo de Investigación Sanitaria* and conducted by myself), was

undertaken to explore the relationship between the characteristics of nursing staff and patient outcomes (Subirana et al., 2010). The search strategy sought to locate any empirical study, of any study design, published in Spanish or English relating to adult patients admitted to hospitals for acute care. It covered five databases (Cochrane Library, Medline, Cinahl, Embase and Psychlit) up to June 2009. In addition, in order to capture features related to Magnet hospitals, where the hospital has undertaken a systematic evaluation of its nursing practice by the American Nurses Credentialing Centre and met stringent quantitative and qualitative standards that define the highest quality of nursing practice and patient care (The Center for Nursing Advocacy, 2003), published reports relating to these hospitals were included. One part of that review involved collation of the outcome measures or indicators reported in all these papers and this is presented in Table 3.5. Nursing staff measures and nurse workforce identified in the included studies are available at Appendix B.

Variables were grouped into mortality, complications (both linked to nursing care), patient perception, symptom management and monitoring, team working and treatment alliance and management related. Some are more commonly measured in the studies and/or have been demonstrated to be more strongly related to nurse staffing characteristics. For instance, while the incidence of pressure sores, patients falls, upper gastrointestinal bleed, pneumonia, sepsis shock and deep vein thrombosis, might be plausibly related, along with other factors, to nursing care, studies report a weak relationship between nurse staffing characteristics and these outcomes (Shuldham et al., 2009).

One of the most commonly used outcomes is failure to rescue, a validated indicator of the quality of acute hospital care for surgical patients (Silber et al., 1992). In the research literature, failure to rescue is defined as death occurring as a result of a complication not present at the time of admission(Silber et al., 1992). Needleman *et al.* (2002) limits this to five potentially fatal complications: pneumonia, shock or cardiac arrest, upper gastrointestinal bleeding, sepsis or deep vein thrombosis. Early identification and nursing interventions can influence the risk of death. Aiken's work has demonstrated an association between the increase in the number of patients per nurse (Aiken et al., 2002) or in the proportion of nurses holding a bachelor's degree (Aiken, Clarke, Cheung et al., 2003) and the likelihood of failure to rescue, findings replicated in the UK, at least when comparing staffing levels at the upper quartile ('best' staffed) with the lower quartile ('worst' staffed) (Rafferty et al., 2007). An association has also been found

between the (higher) number of hours of care per day provided by registered nurses and (lower) rates of failure to rescue (Needleman et al., 2006; Seago et al., 2006).

Table 3.5: Outcomes Reported in Staffing-Outcomes Research Studies

Nursing Care Related Outcome Measures / Indicators
(Some indicators may fit under one or more headings)

Mortality linked to Nursing Care
- Failure to rescue
- Intra-hospital mortality
- 30 day mortality

Complications linked with Nursing Care
- Cardiac arrest
- GI bleeding
- Medication errors
- Nosocomial infections
- Patient falls
- Pressure ulcers
- Pulmonary failure
- Venous thrombosis

Patient Perception
- Patient satisfaction with quality of care

Symptom monitoring and management
- Effective attention to symptom care
- Functional status
- Monitoring of functional status
- Pain control
- Therapeutic self-care
- Unplanned re-admission / rate

Team Working/Treatment Alliance
- Communication
- Coordination

Management Related
- Costs
- Length of stay

In contrast, one European study did not find that nurse staffing was a significant predictor of failure-to-rescue (Van den Heede et al., 2009). However these authors suggested that this could be due to smaller variation in nurse staffing among hospitals and/or a question over the use of country-wide, hospital databases, suggesting the need for nursing-unit level analysis (Van den Heede et al., 2009). Nevertheless, other possible outcome measures are more general (length of stay, patient satisfaction with care and unplanned hospital readmission) and often associated with nursing, though also influenced by other factors including non-nursing staffing levels and structural factors such as policies on discharge dates or the wider environment of care. Others are not studied at all or are less frequently identified. Examples here include the nurse's knowledge of the patient's condition and treatment, strength of treatment alliance and team working. Only one outcome measure relates to the patient's perception, using the more general notion of patient satisfaction or patient experience with their care as the indicator. Despite known methodological limitations of such a measure, with results prone to bias and variations in what the patient is asked and how it is asked (Carr-Hill, 1992), this indicator is frequently identified as 'sensitive' to nursing.

Assessment of healthcare quality from patient experiences included communication, satisfaction and complaints (Griffiths, 2008). Moreover when it is explored using

Donabedian's framework dimensions (Rademakers et al., 2011), patients experiences regarding the process aspects explained 23% of the variance in the overall assessment followed by the structure aspects with 21%. It is interesting to highlight that experiences related with outcomes only explain 13% of overall assessment of healthcare quality. Special attention must be made in staffing-outcomes research to gain insight into the patient's perspective on nursing-sensitive outcomes. To date, this has not been frequently explored.

It is important to highlight that each of these potential outcomes could be brought about, and/or influenced, by another member(s) of the health care team providing care to the patient. As Pringle and Doran (2003) argue, it is difficult to determine whether or not such outcomes can indeed be attributed solely to nursing care. That said the potential contribution of the nurse to each of these possible areas is at least plausible. Indeed, it is in this manner that one can understand and expect an association between levels of nurse staffing and staff experience with failure to rescue. It can be plausibly argued that failure to rescue could be prevented through careful patient surveillance, with early detection, monitoring, titrating as well as providing instantaneous interventions to maintain stability in order to avoid crisis (Benner et al., 1999:116-117). This would be most likely to occur when staffing levels were adequate and when undertaken by experienced nurses. Failure to rescue can thus be seen to represent an outcome that is more specific to and directly linked with nursing care.

In general, any analysis or interpretation of the association of potential nursing outcomes and patient's health status or ill-health experience outcome must take into accounts factors of case-mix and patient characteristics. For instance, Tourangeau (2005) argues that hospital-related factors such as physician expertise, teaching hospital type and hospital location or setting must be taken into account as each has been empirically shown to affect hospital and patient mortality rates. The measurement of structural factors may also provide important contextual data to help explain differences in nursing outcomes between individual nurses, patient groups and institutions. However despite research carried out (Flynn & McKeown, 2009; Subirana et al., 2010) to demonstrate an association between models of nurse staffing and patients' outcomes, there is insufficient evidence to establish a causal relationship between these factors. As these authors stated, it is time to review and reconsider how nursing outcomes are defined and measured (Flynn & McKeown, 2009). Available evidence does not allow drawing conclusions on observed

associations between nurse staffing and outcomes (King's College National Nursing Research Unit, 2009) .

3.5.   Key Variables Related to Outcomes of Nursing Practice

Nursing practice is a complex phenomenon and to understand this complexity it is helpful to review Figure 3.1 presented and described at the beginning of this Chapter (page 36). Nursing practice is embedded in the interaction between patient, health care practitioners and the wider health care system. In consequence research on outcomes of nursing practice may focus on patients (patient component), the nurse her/himself (nurse staff component) and/or the health care system (health care system component). Donabedian's structure-process-outcome framework provides an overview of possible factors that may inhibit or enhance nursing practice effects on patient. Table 3.6 presents study variables identified in the review of the evidence on nurse staffing and outcomes (Subirana et al., 2010).

Generally, nursing staff characteristics (such as qualifications, level of experience) can be viewed as a core part of the structure, as they provide the context to enable positive effects on patients. However, some factors may operate in particular ways and thus be conceptualised as part of both structure and process. For instance this is the case of 'working with other nurses who are clinically competent' this variable could be viewed as a part of the context (thus structure) surrounding care, and also as a core component for 'safe' practice within the process category, relating to the way that the nursing care is delivered to the patient. A similar observation could be applied to all the 'essential' characteristics identified from Magnet hospitals(Kramer & Schmalenberg, 2005); these variables operates within both the structure and process components of Donabedian's framework.

Variables analysed in Table 3.6, were identified from quantitative study designs. The challenge is to complement these variables and their interrelationships with the data provided from other perspectives in order to have a broad and a rich view of this topic and gain insight into the meaning of outcomes of nursing. Most of the variables reported as outcomes can not be catalogued as outcomes of nursing practice per se, taking into account definitions discussed in previous sections and could be labelled as negative outcomes.

Table 3.6: Key Variables Related to Outcomes of Nursing Practice

Structure	Process	Outcome
Patient Characteristics: Age, gender, marital status, illness characteristics **Human Resources:** Ratios, education, experience, expertise **Organisational Policies:** International, national, locally. Staffing levels, staff mix, workforce planning, workload, work environment, turnover. Pursuit of evidence-based practice **Working Environment** **Materials and Equipment**	**Nursing Interventions:** Monitoring patient health status Performing therapeutic treatments Integrating patient care to avoid gaps in healthcare **Team Working/Alliance:** Communication Coordination Patient-nurse interaction **Nature of Care:** Model of care Nursing model Nurse competencies in practice Pathways, protocols and guidelines implementation **Nursing Leadership**	**Patient Component** <u>Mortality linked to Nursing Care</u> Failure to rescue Intra-hospital mortality: 30 day mortality <u>Complications</u> Cardiac arrest GI bleeding Medication errors Nosocomial infections Patient falls Pressure ulcers/sores Pulmonary failure Venous thrombosis <u>Symptom monitoring and management</u> Functional status / independence Knowledge of condition and treatment Pain control Symptom management Therapeutic self-care Unplanned re-admission / rate <u>Patient Perception</u> Patient satisfaction with quality of care <u>Management Related</u> Costs : Length of stay
Magnet hospital essentials* Working with other nurses who are clinically competent Good nurse-physician relationships and communication Nurse autonomy and accountability Supportive nurse manager-supervisor Control over nursing practice and practice environment Adequate nurse staffing Concern for the patient		**Nurse Staff Component** Absenteeism Burnout Dissatisfaction with job High emotional exhaustion Role tension related to working conditions and/or environment

*These operate within both the structure and process components of Donabedian's framework.

Taking as an example failure to rescue, this negative outcome can be transformed into a positive outcome when despite the presence of any complications included in the definition of failure to rescue, death did not occur. The challenge, as Benner argues (Benner et al., 1999), is to understand and demonstrate nursing practice's impact on patients.

3.6.   Chapter Summary

Based on a concept analysis of outcomes of nursing, this Chapter sought to clarify some key terms and issues related to the exploration of the outcome of nursing practice which are mainly related to structure variables and the nursing process and could be determined as a measure that captures the previous or current effects of nursing on an individual's or a group of patients' health status. This has led to an understanding of the

term 'outcomes of nursing' as referring to patient outcomes related to, or as a consequence of, nursing care. As Verran (1996:326) argues, such an interpretation is applicable across different settings and conditions with the intention of reflecting the pattern of nursing care delivered. Accordingly, a measure or indicator of the outcomes of nursing is one that either directly (measure) or indirectly (indicator) captures the effects of nursing care on an individual or a group of patients' health status.

There is a need to understand better what it is about nursing care and its provision that may lead to a failure to rescue, or other adverse nursing outcomes, within the wider context of structural factors surrounding care. In addition, it is necessary to take a further step complementing structure variables with possible process variables as well as to try to identify and explain their interactions. Key questions include the following. How is it that staffing numbers and staffing mix make a difference to the process of care? What are the factors implicitly or tacitly embraced within the number and type of staff that are operating to either enhance or delay acting on symptom changes?

These questions suggest the importance of gaining insight into the operating mechanisms within any associational relationship and undertaken at a nursing unit level. Possible factors include available nursing time and its effective use, as well as the level of experience of the nurse or, more fundamentally, the way nurses use and apply their knowledge to enable high quality care delivery. It is necessary to provide further vision so that nursing research is directed to enhance conceptual understanding of the nature of nursing care, how methods that guide practice, such as the nursing process, are applied and, through empirical research to demonstrate nurses' accountability about patients care and the implications for outcomes.

The complexity of the phenomenon justifies the need to establish clearly nursing outcomes related to the nurses' independent role, in contrast to those arising from the collaborative role. In addition, research on nursing outcomes and nursing practice must retain a focus on assuring safety in care settings to promote positive patient outcomes. Moreover, it may be necessary and important to bear in mind that jointly with all the different aspects considered above, a key aspect to achieve positive patients' outcomes is to promote mutual understanding of the roles played by the different health professionals (Henderson, 1978).

As Mark *et al.* (2004) argues, it is of paramount importance to develop a plausible theory that leads to an understanding of nursing's contribution to high quality and safe

patient care. Knowing that failure to rescue or a delay in acting on indications of a pressure sore or changes in symptom severity leads to a poor patient outcome, even death, is not enough. The key is to identify the fundamental outcomes of nursing and certainly assess the structure and process issues that may be essential in their achievement.

The discipline of nursing deals with the challenge of identifying nurses' specific contributions to the achievement of desired outcomes of nursing practice and to facilitate the best conditions to guarantee patient safety and promote appropriate outcomes. There is a need to focus on what is understood by outcomes of nursing practice. If not, there is a danger that, if the terms are used without a full understanding of their meaning and definition, resulting practice may be ambiguous, unfocused, and ill thought through (Cutcliffe & McKenna, 2005a:xi). Moreover and as clearly stated by Orem, nowadays it is still most often that outcomes of nursing practice are related to generalised concepts from biomedical and psychosocial sciences, not to nursing science (Orem & Taylor, 2011). If these challenges are not addressed, nurses as health professionals will remain invisible and potentially dispensable. This situation could be exacerbated under the constraints that need to be faced currently (Bond & Thomas, 1991; Clarke, 2009).

In conclusion, in the remainder of this PhD thesis, an outcome of nursing practice is defined as a measure that captures the previous or current effects of nursing practice on individual or a group of patients' health status in all settings in which caring interaction may occur. It may be measured directly (outcome measure) or indirectly (outcome indicator). In this definition, the word nursing includes nursing care and nursing interventions both from the independent and the collaborative nurses' role and refers to an individual or a group or patients. If the effect of nursing is being assessed on the wider population, it is appropriate to talk in terms of the impact of nursing.

Part II

METHODOLOGY AND METHODS

4.1. Introduction

This Chapter presents the philosophical and theoretical underpinnings of the research and provides a rationale for the methodology selected to investigate the relationship between nurses' variables and patients' outcomes and safety in a high dependency unit (HDU). The methodological approach consisted of prospective observational study and exploratory research, employing both quantitative and qualitative strategies. The context, HDU, and the issues under study (nursing interventions and patients outcomes and safety), were complex, dynamic and changing. The use of both perspectives within a multi-methods approach allows exploring nurses' variables that influence patients' outcomes and safety, in addition to understanding the mechanism supporting the association between them in the HDU setting. The remainder of this Chapter describes philosophical and theoretical perspectives (section 4.2), rationale for research approach (section 4.3) ethical consideration (section 4.4) and standards for quality (section 4.5). The Chapter summary is presented in the last section 4.6.

4.2. Philosophical and Theoretical Perspectives

Paradigms represent a worldview and imply a set of basics beliefs that define the philosophies underpinning research (Guba & Lincoln, 1994:107). Inquiry paradigms help researchers to make decisions about the ontological (What is the nature of reality and what can be known about it?), epistemological (What is the relationship between the inquirer and that being studied?) and methodological questions (How should the inquirer obtain knowledge?) in order to be able to generate and develop knowledge (Guba & Lincoln, 1994:108; Polit & Beck, 2008:13). In short, paradigms of inquiry can be understood as viewing positions (Sandelowski, 2000). As stated in part I of this thesis, Donabedian's Quality Framework (Donabedian, 1966) was the theoretical framework that guided this research together with the conceptual framework of Benner (Benner et al., 1999; Benner, 2001b). According to Donabedian (1966) evaluation of structure, process and outcome allows deductions to be generated on the quality of care. Although this information is easy to obtain, it has the disadvantage that often the relationship between structure and process or between structure and outcome is not well established (Donabedian, 1966). To

understand the implications of components of nursing practice on patient outcomes and safety, it is necessary to explore the complex, dynamic and changing structures, processes, and outcomes of nursing practice by drawing on several strategies of inquiry requiring a multi-methods approach.

In the later version of Guba and Lincoln's work five paradigms are identified to guide nursing research: positivism, post-positivism, critical theory or critical social theory, constructivism and participatory research (Guba & Lincoln, 2005:200). Research paradigms define what the researchers are doing and what falls within and outside the limits of legitimate research based on the researcher's answers to the three fundamental questions, described at the beginning of this section, linked to ontological, epistemological and methodological issues. These questions are interrelated so that the answer given to any one of the three questions, links to the other two (Guba & Lincoln, 1994:108). However this stance has been criticised and considered rigid because it suggests a dichotomy between quantitative and qualitative research approaches and limits the possibility to combine them (Pope & Mays, 1995).

Within the discipline of nursing, the research approach needs to be more flexible because the phenomenon of concern is the human-universe-health process. These concepts, human, universe and health, cannot be viewed separately and the relationship established between them may differ according to the Nurse Theorist analysing it, meaning that different paradigmatic perspectives and complementary paradigms are needed to explain the nursing phenomenon of concern (Parse, 2000; Fawcett, 2005:6).

In this PhD, theoretical contributions were obtained from using methods and assumptions that are consistent with the constructivist paradigm. In short the goal was to understand the world of high dependency care from the point of view of the patients and nurses, considering that many constructions of this reality are possible based, in particular, on the interaction between participants and myself as a researcher and recognising that knowledge is maximised when the distance between participants and researcher is diminished (Polit & Beck, 2008:15). Nevertheless some conclusions in the PhD rely on methods and assumptions of the positivistic paradigm. The ontological, epistemological and methodological theoretical stances are described below.

4.2.1. Ontology

Based on an extensive literature review, little evidence was found relating to characteristics of nursing that influence patients' outcomes and safety in a HDU (Subirana et al., 2010). The majority of studies were performed in general wards or intensive care units (ICU) settings, analysing the relationship between nursing staff and patients outcomes from a positivistic perspective (Tutuarima et al., 1993; Pronovost et al., 1999; Aiken et al., 2002; Needleman et al., 2002; Rafferty et al., 2007; Shuldham et al., 2009; Van den Heede et al., 2009). In this PhD research, when considering the ontological perspective, it is assumed that the approach to exploring nursing variables that influence patients' outcomes and safety is incomplete; the nature of reality extends beyond nursing structure variables and the correlational evidence linking nursing to patient outcomes and safety. To gain greater insight, it is necessary to explore why and how such a relationship might occur from the perspective of the patients and nurses within the situation. In short, this means investigating in-depth the consequences of nursing practice in addition to those aspects of nursing care that influence patients' outcomes and safety. To do that it is necessary to consider a broader perspective than the positivist paradigm in which findings are not influenced by the researcher, objectivity is sought and the research process is deductive (Polit & Beck, 2008:14). The constructivist paradigm offers this broader perspective because it assumes that reality is multiple, is subjective and as a consequence the research process is mainly inductive (Crookes & Davies, 2006:53).

4.2.2. Epistemology

From the epistemological perspective, which is concerned with the researcher relationship with what is researched, the voice of the researcher is that of a fervent participant actively committed to facilitate the reconstruction of multiple voices of their own construction, as well as all other participants (Guba & Lincoln, 2000:137-138). In this research, the constructivist paradigm allows understanding from patients' and nurses' perspectives as to what aspects of nursing care are perceived as influencing patients outcomes and safety and, in addition, gaining insight into what is perceived as an outcome of nursing practice.

My background as an Intensive Care Nurse, as a nurse in an Epidemiology Department and currently my position as a Professor in a Nursing School influenced the way in which I approached the study through a researcher's eyes. Benner's conceptual framework guided my intensive care nursing period (Benner et al., 1999; Benner, 2001b)

and made me aware of how nurses carried out caring interventions, variations in nursing practice between nurses and the impact that this had on patients' outcomes. In the Epidemiology Department I had the opportunity to learn the importance of method and methodological rigour. My current professorial position allows me to deepen my understanding of Nursing Theorists and their work that have illuminated the complexity, and changing dynamics of nursing care (Kolcaba, 2003; Fawcett, 2005; Marriner, 2006; Meleis, 2007) each from its particular perspective based on the variety of paradigms of inquiry. In order to explore and link the meaning of aspects of nursing care influencing patients' outcomes and safety a picture is needed of what is going on in the HDU setting. Following with the above approach, the methodological level has not been restricted to the application of inductive or deductive reasoning because both are needed to answer the research questions, as it is explored in the next section.

4.2.3. Methodology

The purpose of this section is to present the link between the research questions and the multi-method design, along with the justification of this methodological approach. Miles and Huberman agree that qualitative and quantitative methods linkage offers a detailed register of possible data collection techniques and data analysis techniques combinations (Miles & Huberman, 1994:41). In this research I simultaneously collected both quantitative and qualitative data. Following Cresswell's terminology (cited in Adamson, 2008:234) this was a concurrent transformative strategy, meaning that data for Studies I and II were collected simultaneously and integration occurs in the interpretation phase (Adamson, 2008:234). The main reason for the selection of a multi-method approach was the focus on the nature of nursing care that in this research was HDU patients. Nurses Theorists consider human beings the focus of nursing care, being wholly understood through a combination of physical, psychological, social, and spiritual components. To explore the influence of nursing care on this whole, consideration must be given as to how to quantify if there is a relationship between nurses and patients in the HDU setting in addition to considering factors that could be significant in explaining important realities and relationships. Table 4.1 details the research questions and the Study types to answer them. Study I aimed to identify relationships between nurses' structure and process variables and patients' outcomes in the HDU (quantitative approach) while Study II aimed to construct new insights, reasons and clarification about aspects of nursing care influencing patients' outcomes and safety and what is perceived as

outcomes of nursing practice from nurses' and patients' perspectives in the HDU (qualitative approach).

Table 4.1: Research Questions and Methodology Design

Research questions	Study type
What are the structure and process variables related to nursing that influence patient outcomes and safety in a HDU?	Study I: Prospective observational study
What aspects of nursing care do patients perceive as influencing patient outcomes and safety in a HDU?	Study II: Exploratory, interview study
What do patients perceive as the outcomes of nursing practice in a HDU?	
What aspects of nursing care do nurses perceive as influencing their outcomes and safety in a HDU?	
What do nurses perceive as the outcomes of nursing practice in a HDU?	

4.3. Rationale for the Research Approach

There is extensive literature on nursing variables that influence patient outcomes but little is known about this topic in the HDU setting or about how structural and process variables interact to influence patient outcomes (Subirana et al., 2010). Literature suggests that lower nurse to patient ratios (structure variable) imply higher mortality, failure to rescue and more adverse events (Aiken, Clarke, Cheung et al., 2003; Aiken, Clarke, Silber et al., 2003; Cho et al., 2003; Cho & Yun, 2009). These findings are not supported in those hospitals known for good nursing care (process variable) in which mortality levels were lower when comparing a range of hospitals (Aiken et al., 1994).

Besides the measurement of the structure variables, the identification of the process variables that during nursing care will positively influence patient outcomes helps the achievement of better outcomes for patients (Hanneman, 1996; Fairley & Closs, 2006). The quantitative approach is the most widely used to explore the relationship between nursing variables and patient outcomes. However, apart from Hanneman's and Benner's work in which qualitative approaches were used, what is not stated it is why and how this relationship of nurse staffing levels and patient outcomes occurs (Hanneman, 1996; Benner et al., 1999; Benner, 2001b).

In this PhD, quantitative (Study I: Prospective observational study) and qualitative (Study II: Exploratory, interview study) approaches were applied to confirm findings of previous studies in the Spanish context and within a HDU, to gain insight in the aspects of nursing care that influence what it might be perceived as an outcome of nursing practice, in addition to presenting a more elaborated and deeper understanding of the phenomenon of interest. Although a correlational study does not establish objectively a cause-effect relationship it enables knowledge of correlations between the study variables, which helps to answer the question of what were nursing structure and process variables that influence patients' outcomes and safety. Quantitative methods alone may fail to provide insights about why the variables are related despite the fact that the approach can demonstrate a systematic relationship between them (Polit & Beck, 2008:309-336). Data from correlational studies help to corroborate and clarify findings as well as interpreting the results. Data from the exploratory study were therefore used to understand and explore the meaning given by participants to aspects of nursing care influencing patients and their perceptions of the outcomes of nursing practice.

The reason it is necessary to reproduce in a HDU the quantitative approach reported in the literature is because these patients' needs are different to those patients admitted to a general ward or in the ICU, meaning that results could differ from current evidence. In Chapter Five specific details on the HDU setting and its patients are given. On the other hand, the qualitative approach allows exploration of patients' and nurses' perceptions which could help to pinpoint aspects of care that are not reflected in quantitative studies, supplement these data and potentially generate new hypotheses for future studies. Application of a multi-method approach is especially helpful when the aim is theory building because it provides greater opportunity for potential disconfirmation. If the theory is confirmed, it leads to a powerful context for the organisation of clinical and intellectual work (Polit & Beck, 2008:311). Moreover, the strengths of one approach (for example, exploratory interview study) are used to address the weaknesses of the other (for example, prospective observational study) (Adamson, 2008:231).

4.3.1. Theory Building Through Grounded Theory

This thesis focused on producing new forms of insight through empirical activity and to illuminate what was going on and what was happening around the study event. This forms the reason why the choice of Grounded Theory (GT) was appropriate to the study purpose. The aim was to generate a substantive theory to explain aspects of nursing care

that influence patients and what patients and nurses considered outcomes of nursing practice in the HDU. The research process involves formulation, testing and redevelopment of propositions until a theory was constructed (Burns & Grove, 1997:19; Morse et al., 2009:14), and here enabling insight into what, why and how nurses' interventions influences patients outcomes and safety. Theorising involves designing concepts and the formulation of them in a logical, systematic and explanatory manner (Trinidad, 2006:17-18; Andréu et al., 2007:56); it means constructing from the data, an explanatory scheme that systematically integrates various concepts through phrases to indicate relationships in addition to the findings of Study I. To facilitate the understanding of why constructivist GT has been applied, this section presents key aspects of GT beginning below with an overview of its foundation, followed by its evolution.

GT was developed for the study of social phenomena as a reaction against the extreme positivistic basis of most social research. Its beginnings are located at the School of Chicago. GT is based on the perspective of symbolic interactionism (SI), a theory that approaches the study of human conduct on the assumption that it depends on how people define events and reality and how they act according to their beliefs (Glaser & Strauss, 1967:157; Suddaby, 2006). SI holds that people are in a continual process of interpretation and definition as they move from one situation to another with the meanings of events conveyed by the symbols used by people (Eaves, 2001). Hence scientific truth is not the reflection of independent external reality but results from the act of observing and consensus among researchers as to what makes sense on what has been observed (Suddaby, 2006). GT came to light in the 1960s by Glaser and Strauss (Glaser & Strauss, 1967), two sociologists with different backgrounds - Anselm Strauss from the University of Chicago with a strong background in qualitative research and Barney Glaser from Columbia University with a great tradition in quantitative research (Morse et al., 2009:24-25). From their first publication, 'The discovery of grounded theory: strategies for qualitative research' (Glaser & Strauss, 1967) both authors wrote and published new ideas on GT that led them to different positions that have been the basis for identifying divergent schools of thought namely 'Glaserian' and 'Straussian' versions of GT (Walker & Myrick, 2006; Polit & Beck, 2008).

In the Glaserian version, theory is grounded in the data, the researcher does not interact with participants, but remains passive and coding is less systematic. Glaser attempted to bridge the gap between 'emergence' and 'theoretical sensitivity' developing the concept of theoretical coding as distinguished from the substantive coding. He

suggested a list of terms, 'coding families', that can be used for theoretical coding. Although this approach avoids initial GT problems with inductivism because it allows two different types of codes that are linked to these different forms of coding, substantive codes and theoretical codes, it is unclear how formal and substantive concepts can be linked, making the approach difficult to apply in practice (Kelle, 2005).

In the Straussian version, theory is more focused on the interpretive description, the researcher is active and coding is more systematic guided by a coding technique, the 'coding paradigm'. This paradigm, which according to Glaser, forces the data and the theory (Cutcliffe, 2000; Glaser, 2004), consists of four items: conditions, interactions among the actors, strategies and tactics and consequences. Such a coding paradigm is specially useful during axial coding because it helps to find out what is relevant for the research topic (Strauss & Corbin, 2002; Kelle, 2005:134). This is the approach followed in the PhD analysis.

One of the most notable differences between the two authors is the proposed use of a theoretical framework. While Glaser advocates the use of a 'ad hoc' theoretical framework, Strauss suggests the use of a specific framework based on an understanding of human action (Kelle, 2005). Both systems use the constant comparative method but the difference between the two concerns mainly the manner in which data are analysed (Polit & Beck, 2008:522). Constant Comparative Method is a four-staged method beginning with comparing incidents applicable to each category and followed by integrating categories and their properties, delimiting the theory and writing the theory (Glaser & Strauss, 1967:105).

Glaser and Strauss joined the faculty of the Doctor of Nursing Science programme at University of California, San Francisco (UCSF). The introduction of GT to the doctoral nursing students led to the growth of nursing studies based on this methodology and as a consequence new theorists with a nursing background were able to substantiate explanations and theories which was very important for nursing research. Among students of that time are Phyllis Noerager Stern, Juliet Corbin as well as Jean Quint (later Benoliel) who published in 1967 'The nurse and the dying patient'. Some data she collected was used by Glasser and Strauss in their *Awareness of dying* book (Morse et al., 2009:25). During the last decade, the work of Kathy Charmaz, who graduated from the PhD programme in sociology at UCSF, has emerged as a new approach to GT, she became the leading proponent of constructivist GT.

In constructivist GT, categories and theory are constructed by the researcher: '*my version of grounded theory returns to the classic statements of the past century and reexamines them through a methodological lens of the present century*' (Charmaz, 2006). A clear reflection of the influence that several authors have left and the dissimilarity of GT methodology can be seen by analysing its evolution. Figure 4.1, modified from (Morse et al., 2009:17), demonstrates this by focusing on books published up by Glaser, Strauss and Charmaz. The next section focuses on Constructivist GT to reflect on what has been applied in this dissertation and outlines variations between the three main GT approaches.

	1965	
Glaser & Strauss. Awareness of Dying		
	1967	
Glaser & Strauss. The Discovery of Grounded Theory		
Glaser. Theoretical sensitivity ≠ 1967	1978	
	1987	Strauss. Qualitative Analysis for social scientist
	1990	Strauss & Corbin. Basic of Qualitative Research 1º ed.
Glaser. Basic of Grounded Theory Analysis	1992	
	1996	† Strauss
	1997	Strauss & Corbin. Grounded Theory in practice
Glaser. Basic of GT analysis	1998	Strauss & Corbin. Basic of Qualitative Research 2º ed.
	2000	
Glaser. The Grounded Theory perspective	2001	
Glaser. The Grounded Theory perspective II	2003	
Glaser. The Grounded Theory perspective III	2005	
Glaser. Doing formal grounded theory	2006	
Charmaz. Constructing grounded Theory, a practical guide through qualitative analysis		
	2008	Corbin & Strauss. Basic of Qualitative Research 3º ed.

Figure 4.1: Signposts of Grounded Theory Development

4.3.2. Constructivist Grounded Theory

This research follows the Constructivist GT approach described by Corbin in the third edition of *Basics of qualitative research: Grounded Theory procedures and techniques* (Corbin & Strauss, 2008-18) and incorporates the pragmatic recommendations for analysis

and theory development proposed by Charmaz (Charmaz, 2006); both are detailed in Chapter Five in the data analysis section.

During data analysis the use of previous knowledge, drawn from relevant literature on the topic under study, is integrated following the patterns of Blumer. This author in 1954 described the notion of 'sensitising concepts' as opposed to the notion of 'definitive concepts' to prevent preceding knowledge to dominate the data for analysis. According to Blumer, sensitising concepts *'suggest directions along which merely to look'* whereas definitive concepts *'provide prescriptions of what to see'* (Blumer, 1954 cited in Bryant & Charmaz, 2010:208,587). Based on this distinction to make a proper use of the literature, the recommendation applied in this PhD for the analysis was to consider the prior knowledge in general, as 'sensitising concepts', and thus to provide an additional lens to explore the data.

Table 4.2. summarises the variations between three main GT approaches. The first column describes the classic positioning of Glaser, the second shows the evolution of GT led by Strauss and Corbin (the Corbin approach presented in the third edition is less rigid and move towards the Charmaz constructivist GT position), and the last column provides Charmaz's more flexible prespective. The GT approach applied in this dissertation is indicated in Table 4.2 by shaded cells. The reason for drawing on a combination of Corbin and Charmaz approach is because as a novice GT researcher I needed some guidelines to follow for the analysis.

As Mills pointed out (Mills, 2006), the GT method is based on the researcher's ontological and epistemological beliefs. Although extensive studies have been carried out using GT methodology, there is a general concern about the quality of GT research published within the nursing field arising from the lack of a clear proposal or account of the analysis methodology (Eaves, 2001).

From my research position, I recognise that the world is complex, that there is no single reality and that the researcher can construct and co-construct concepts and theories to understand the complexity of the world. This position coheres with Charmaz's and Corbin's constructivist GT approaches, in particular: 'the world is very complex, there are no simple explanations for things'. Rather, events are the result of multiple factors coming together and interacting in complex and often unanticipated ways' (Corbin & Strauss, 2008:8).

Table 4.2: Variations Between Three Grounded Theory Approaches*

	Glaser	Strauss & Corbin	Charmaz
Paradigm	Positivism	Postpositivism/ Constructivism	Constructivism
Ontological position	'Real' reality	Pragmatist/ Interactionist	Interpretivism
Epistemological position	Findings as a true	Findings probably true / created findings	Subjective interrelationship between researcher and participant; construction of the meaning
Researcher role	Is passive, exhibiting disciplined restraint	Is active	Constructs categories
Theoretical sampling	Is the process of collecting data	Is conduct to collects new data	Is conduct to develop the properties of the categories
Theoretical sensitivity	Enter the research setting with as few predetermined ideas as possible	Comes from methods and tools to increase researcher sensibility	Reach to the basis, up to abstraction, and probe into experience
Theory generation	Emerging theory, with neutral questions. The theory is grounded in the data	Forcing the theory, with structured questions. The theory is interpreted by researcher	Reflexive stance towards actions, situations and construction of experience and meanings
Coding	Coding is less rigorous, a constant comparison of incident to incident (18 coding families)	Coding is more rigorous, defined by the coding paradigm 'Six Cs' later simplify conditions, actions/interactions, and consequence	Coding is more flexible and creative to reconstructed participants stories into theory
Types of coding	Substantive and theoretical coding	Open, axial and selective coding / Conditional/ consequence matrix / Diagramming	Initial, focused, axial and theoretical coding
Use of the literature	Integrated after the analysis	Integrated after the analysis	Integrated during the analysis
Credibility / Rigour	Is derived from its grounding in the data	The credibility of the theory comes from the rigour	Developing the range of relevant conceptual categories
Basic social process	A basic social process should be identified	Basic social processes need not be identified	A basic social process should be identified

*(Glaser & Strauss, 1967; Annells, 1997a, 1997b; Strauss & Corbin, 2002; Glaser, 2004; Charmaz, 2006; Mills, 2006; Corbin & Strauss, 2008)

As Corbin later wrote, '*concepts and theories are constructed by researchers out of the stories that are constructed by research participants who are trying to explain and make sense out of their experiences and / or lives, both to the researcher and themselves*' (Corbin, 2009:38). My position also coheres with postmodernists, and thus incorporates

the view that there is no one reality, each person gives specific meanings based on their individual characteristics.

4.3.3. Reflecting on the Research Process

Within the Constructivist GT approach, a reflexive stance towards actions, situations and construction of experience and meanings to theory generation is plainly recommended (Charmaz, 2006:188). Thus the research process in this PhD can be summarized as an iterative process that requires continuous reflection -from the formulation of the research questions, the decision as to which was the best design to adopt defining the sample characteristics to the analysis and writing of this thesis; all of this has required a deep process of reflection on my own biases and preconceptions. Undoubtedly, my experiences in high dependency care, my work in the Epidemiology Department in addition to the meetings with my supervisors, have been key influences on the research process used in the thesis.

A common source of data for studies I and II was field notes. Field notes can be divided into methodological, theoretical or inferential and observational notes (Schatzman & Strauss, 1973:37). Methodological notes consist of a description of the developmental activities of research and developmental report on the social interaction of the researcher in the area studied. Theoretical or inferential notes are aimed at building a theoretical interpretation of the situation under study. Observational notes are focused on the essential object of the study and report extensively on the situation observed. Field notes constituted the connection point between the two studies in this thesis. Data for Study I were obtained from hospital records which included electronic and paper records for patients as well for nurses. In the methods Chapter details of the different sources used are presented. Data for Study II were gathered from in-depth patient interviews and nurses' focus groups to generate data from different perspectives. The next section reports why these methods were used. After each interview and focus group brief notes were taken in order to be used during the analysis; their content and its implications during data analysis are described in Chapter Five. Reflexivity is the first step towards enhancing study methodological quality, a description of the standards of quality for this thesis are reported in section 4.5.

4.3.4. Gathering Data

In-depth interviews provide an opportunity for details on a specific topic or experience to be explored. Participants have the capacity to describe, explain and explore topics allowing for a more biographical approach, which represents how an individual makes sense of what has happened to them (Tod, 2006:338). Furthermore, his or her behaviour can be observed by the interviewer, and by expressing opinions and concerns, participants can provide perspectives perhaps not considered by the researchers themselves, thus expanding and verifying knowledge (Pope et al., 2002). In-depth interviews were selected to generate patients' data because nursing interventions and interactions with patients understood as a combination of physical, psychological, social, and spiritual components can be better explained and shared within a private environment. Patients may also be too ill or feel uncomfortable talking about this issue in a group situation. Individual interviews therefore provided an opportunity to endow with details allowing for a more biographical approach, which represented how patients made sense of what had happened to them.

Focus groups were used to obtain the perceptions and experiences of HDU nurses in relation to the process of care. Focus groups can be defined as in-depth open-ended group discussions that aim to investigated a explicit set of issues on a predefined topic (Goodman & Evans, 2006:353). Participant interactions may stimulate a richer or deeper understanding on the nursing role on patient outcomes and could be productive in challenging participants' thinking, or could illuminate conflicting opinions (Jackson, 1998; Mansell I et al., 2004). To facilitate dialogue about experiences, it was considered relevant to create focus groups based on each nursing shift, allowing the shared experiences of the same situations and comparison of individual with group perceptions. Focus groups also allowed observing and assessing the interaction between different people which became an important feature and an integral part of this data collection process (Goodman & Evans, 2006:353). Group interaction was another reason why focus groups were established around nurses' shifts because their interaction supported the statements' credibility. Focus groups provided an opportunity to learn what the group thought and felt in relation to the issue of patient care and outcomes in the context of the HDU.

4.4. Ethical Considerations

Because humans were used as study participants we made sure that all care was taken during the research process to guarantee the protection of their rights. Basic ethical principles extract from the Belmont Report are respect for persons, beneficence and justice; these three principles are the basis of the standards of ethical conduct in research (Polit & Beck, 2008:167,170).

Respect for persons encompasses two fundamental ethical considerations, respect for autonomy and protection of persons with diminished autonomy (Agar, 1999; Matthews & Grant, 2006:131). Respect for autonomy requires that those who have the capability to consider carefully the pros and cons of their decisions should be treated with proper respect for their ability to self-determination. The protection of individuals with impaired or diminished autonomy requires that those who are dependent or vulnerable receive shelter from harm or abuse (Haigh, 2008:131). To guarantee autonomy, researchers must ensure that adequate participant information is provided on the study to enable their decision on taking part and to obtain their freely given consent. The principle of beneficence refers to an ethical obligation to maximize benefits and minimize harm, discomfort and risk. It included the researcher's competency boundaries (Am I prepared to study and be supervised?); benefits, cost and reciprocity (What is the benefit obtained of the study from the participants and researchers perspective?); harm and risk (Are study participants in a vulnerable position?); honesty and trust (What is my relationship with study participants?, Do we trust each other?); and intervention and advocacy (What are we going to do when a problem arises during the study?) (Miles & Huberman, 1994:288-297). At this point, special attention to safeguarding the participants' well-being and guarantee their privacy, anonymity and confidentiality must be paid. Justice, in the context of this research, concerns autonomy to participant information, recruitment and consent processes in addition to the rigour of analysis as well as the dissemination of research findings (Haigh, 2008:131). Some authors consider the right to privacy to be within the justice principle (Polit & Beck, 2008:174).

4.5. Standards for Quality

As noted earlier in this Chapter, within the discipline of nursing the research approach needs to be endowed with different paradigmatic perspectives and complementary paradigms (Parse, 2000). Based on that fact, standards for quality are

reported taking into account paradigms underlying Study I, correlational design and Study II, exploratory design. A variety of methods are proposed in the literature to assess study rigour and trustworthiness which can only be ensured by the systematic and self-conscious application of the methodology of the study (Malterud, 2001; Whittemore et al., 2001; Hawker et al., 2002; Seale, 2002). The following section addresses the methodological quality standards considered for both studies.

From a positivist's perspective, methods to control internal and external validity were used to strengthen the correlational study. Internal validity is related to the fact that it is the independent variable that leads to the outcome rather than other factors while external validity concerns the generalisability of the findings. In this correlational study, sample homogeneity was considered and approaches such as blocking, matching and statistical analysis were performed to control intrinsic confounding variables (Matthews & Grant, 2006:286-308; Polit & Beck, 2008). These strategies are described in Chapter Five.

From a constructivist perspective, to enhance the quality and credibility of the qualitative design Lincoln and Guba's framework (Guba & Lincoln, 1989:233-250) and Miles and Huberman work (Miles & Huberman, 1994:277-280) was considered. Adressing the debates about qualitative research rigour and validity, in short standards for conduct qualitative research (Morse, 2001; Morse et al., 2002), the exploratory study considered six concepts for quality criteria. Five were taken from Lincoln and Guba's framework - credibility, transferability, dependability, conformability, and authenticity, (Guba & Lincoln, 1989:233-250) - and a sixth from Miles and Huberman - focusing on research utilisation (Guba & Lincoln, 1989:233-250; Miles & Huberman, 1994:277-280; Polit & Beck, 2008:538-551).

Credibility, sometime labelled as internal validity, refers to confidence in the truth of findings. It is improved by detail and accurate description of the setting and research participants; techniques that allow this detailed description are prolonged engagement, persistent observation, comprehensive field notes, audiotaping and verbatim transcription, triangulation and negative case analysis (Matthews & Grant, 2006:86; Polit & Beck, 2008:544). The second criterion within this framework is *transferability,* also named external validity; this means that the findings are consistent and have applicability in other settings or groups. Comprehensive field notes, saturation of data and thick, vivid description has been suggested to demonstrate transferability of findings; in the next Chapter the phenomenon under study is described in detail to allow the consideration if

the conclusions drawn are transferable to other participants or healthcare settings. A third criterion is *dependability:* it refers to the stability (reliability) of data over time and conditions, explains if the findings are consistent and could be repeated; to demonstrate dependability, member checking, triangulation and inquiry audit has been applied. The fourth criterion is *confirmability* which refers to objectivity, pointing to the degree of neutrality or the extent to which the findings represent the information created by the participants and not researcher bias, motivations or concerns (Polit & Beck, 2008:539). To assure confirmability, techniques such as triangulation and audit as described above are valid. The last criterion considered within Lincoln and Guba's framework was *authenticity* (Guba & Lincoln, 1989:245-250): it refers to the extent to which researchers show a range of multiple realities as it is necessary that findings effectively represent the voices of the participants. This is supported by prolonged engagement, persistent observation, audiotaping and verbatim transcription in addition to thick description. The researcher also considered it important to make explicit *research utilisation* in short what is the pragmatic value of the study (Miles & Huberman, 1994:277-279).

4.6. Chapter Summary

This Chapter explained the research methodology used to address the overall study's design. It detailed ontological, epistemological and methodological stances, followed with the reasoning as to why this methodology was adopted. It provided a description of the origin and evolution of the GT as well as an analysis of the variation between different GT approaches to facilitate the understanding of why constructivist GT was used for data analysis in Study II. It also presented the approach adopted by the researcher to aid reflection on the research process. Finally, ethical considerations and standards for quality were detailed. The next Chapter presents the methods used in the empirical phase of the PhD that are consistent with the described methodology.

5.1. Introduction

This Chapter is about the study design and methods of this research project. The research purpose was to analyse and explore characteristics of nursing that influence patients' outcomes and safety. Gaps identified in the literature and described in the literature review were used to design this empirical work. From a quantitative perspective and with a prospective observational design, Study I aimed to answer the question 'what are the structure and process variables related to nursing that influence patients' outcomes and safety in a HDU?.' From a qualitative perspective, Study II aimed to gain a deeper understanding of and build theory around the aspects of nursing care that nurses and patients perceived as influencing patient outcomes and safety and perceived outcomes of nursing practice in the HDU. The first part of this Chapter, the next four sections, outlines research design (section 5.2), research context (section 5.3), research population (section 5.4) and ethical issues (section 5.5). It follows with two specific sections (5.6 and 5.7) one for each study. Section 5.6 refers to Study I, the prospective observational study, describing participants, data collection and data analysis. Section 5.7 reproduces the same pattern for Study II, the exploratory interview study, explaining participants, data generation and data analysis. The lasts two sections include criteria for evaluation (section 5.8), and the Chapter summary (section 5.9) provides an overview of the key issues during research process.

5.2. Research Design

As discussed in the preceding Chapters, when studies of the relationship between nursing and patients variables were analysed, the common settings were general wards and intensive care units (ICU) and the studies' perspectives were most usually within the positivist approach (Tutuarima et al., 1993; Pronovost et al., 1999; Aiken et al., 2002; Needleman et al., 2007; Shuldham et al., 2009; Van den Heede et al., 2009).

To address identified gaps, the PhD's empirical work was organised into two studies. Study I, a prospective observational design, aimed to reproduce and to identify what were the structure and process variables related to nursing that influence patient outcomes and safety in a HDU, exploring new patient and nurse variables within the structure and

process dimensions. Complementing this was Study II an exploratory interview study which aimed to cover the gaps in evidence in relation to understanding the mechanisms through which features of nursing structure and process could influence patient outcomes and safety. Through an exploratory interview study it would be possible both to clarify and help to understand the analysis and the interpretations of the Study I findings, the prospective observational study, and also to provide more and deeper insight of the outcomes of nursing practice. The specific research design for each study is described in sections 5.5 (Study I) and 5.6 (Study II).

For this research two triangulation approaches were used, methodological and data triangulation. Triangulation was first defined in 1956 as a way to promote multiple methodology approaches (methodological triangulation), and latterly extended as a strategy to combine two or more data sources (data triangulation) (Adamson, 2008:233; Polit & Beck, 2008:309). Methodological triangulation involves the use of quantitative (Study I) and qualitative (Study II) approaches; data for both studies were collected simultaneously from October to December 2009 for patients and in Study II was extended to January 2010 for nurses because of the difficulties in scheduling nurses focus groups in December due to the Christmas holiday period. Participants in Study II had also participated in Study I. Data triangulation involved the use of different sources to gather the same data. In Study I, patients' data were collected from patients' records and patients' hospital databases; in Study II aspects and the meaning of outcomes of nursing practice were explored from patients' and nurses' perspectives. Initially each study was analysed separately and then the interpretation of the findings from the two studies was conducted together.

5.3. Research Context

5.3.1. Hospital de la Santa Creu i Sant Pau

The study took place at the HDU of Hospital de la Santa Creu i Sant Pau[2], Barcelona (Spain), a 644 bedded teaching hospital. '*Hospital de la Santa Creu i Sant Pau is a high complexity hospital which dates back six centuries, making it the oldest hospital in Spain. Healthcare is centred on Barcelona but extends to the rest of Catalonia. The hospital has distinguished itself in healthcare provided in many fields, making it a reference centre in several specialities.*'

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[2] HSCSP 2005, viewed 7 February 2011. http://www.santpau.es/hosp_presentacio.asp>

The hospital's catchment population is 428,699 distributed over an area of 101.35 km^2. These data correspond to 25% of the population of Barcelona. The reference hospital area includes nine primary healthcare centres and the population aged over 75 years has risen to 12.1%. Most discharged patients are from Barcelona (78%), followed by Barcelona province (15.9%), the rest of Catalonia (2.3%) and from outside of Catalonia (3.8%)[3].

Evidence suggested hospitals organisations and characteristics are important as they influence patient outcomes. For example, it has been reported that a lower mortality rate depends on hospital nursing leadership styles (Cummings et al., 2010), and in those hospitals these characteristics included being a teaching hospital and privately funded (Hartz et al., 1989).

Table 5.1 provides key details of the hospital setting during the study period. It shows human and structural resources, in addition to economic resources and the data reported are from 2009.

Table 5.1: Hospital Human, Structural and Economic Resources in 2009[2]

Human Resources	
Health staff	2110
Non-healthcare staff	515
Staff in training	275
Total	**2900**
Structural Resources	
Beds	644
Day care bed	136
Critical care beds (HDU)	64 (24)
Incubators	17
Operating rooms	18
Emergency rooms	67
CT scan / NMR	4 / 3
Linear accelerators / Room for gamma graphic study	3 / 3
Economic Resources (in thousands of euro)	
Operating income	319 421
Operating expenses	319,614
Investments	27,964

To complete this hospital description, Table 5.2 illustrates hospital care activity and Table 5.3 presents teaching and research activity, both for 2009.

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[3] Fundació de Gestió Sanitària de l'Hospital de la Santa Creu i Sant Pau, *Hospital de la Santa Creu i Sant Pau 2009*, viewed 7 February 2011 <http://www.santpau.es/memoria/memoria_2009.pdf>

Table 5.2: Hospital Care Activity in 2009[2]

Department or activity	
Hospital discharged	33,859
Emergency	152,308
Surgical activity	39,466
Births	1,694
Transplants	96
Day hospitals activity	74,352
Ambulatory services	347,812
Specialised ambulatory services	52,870

Table 5.3: Hospital Teaching and Research Activity in 2009[2]

Teaching (students)	Research
Medicine and other specialties	Active research projects: 169
Undergraduate: 303	Research projects awarded: 53
Residents: 308	
Nursing	
Undergraduate: 259	Staff financed and funded asset: 38
Graduate training: 180	Staff financed and funded granted: 8
Residents: 7	
	Clinical trials with drugs: 124
Family therapy: 253	Clinical trials with medical devices: 5
	Observational studies: 20
	Publications: 408
Speech: 480	Average impact factor 5.02

5.3.2. High Dependency Unit (HDU)

The HDU is an '*area for patients who require more intensive observation than can be provided on a general ward. It would not normally accept patients requiring mechanical ventilation, but could manage those receiving invasive monitoring*' (Association of Anaesthetists 1991 cited in Brooks, 2000). These units are also named intermediate, progressive, or step-down units. Literature suggested that up to 40% of patients currently admitted to an ICU might be more correctly managed in a HDU (Pappachan et al., 1999); in a study conducted in Spain, this percentage was around 28% (Solsona et al., 1995).

HDUs provide appropriate resources to a group of patients up to critical care level 2 that cannot be provided on a general ward. Level 2 is defined as '*Patients requiring more detailed observation or intervention including support for a single failing organ system or postoperative care, and those stepping down from higher levels of care*' (Department of Health, 2000). Nurses are the key caregiver on these units having a direct influence of the quality and outcome of that care. Nursing care required is at a level that lies between the general ward and full ICU, as does the nurse/patient ratio. The Royal College of Nursing

(Galley & O'Riordan, 2003) recommended specific nursing availability based on a system of categorisation into the levels of care.

HDU in *Hospital de la Santa Creu i Sant Pau* admits acutely ill patients mainly from the emergency department, followed by patients from post-surgical resuscitation unit, general ward, ICU, or from other hospitals. Furthermore HDU provides cover for patients who undergo primary angioplasty, endoscopic examinations for emergency and risk bleeding patients, pre and post placement of pacemaker, besides stroke patients coded for hospital fibrinolytic therapy and patients from ICU and from HDU that need haemodialysis. Nurse patient ratios are 1 to 9 for patients whose requirements are at level 0 or 1 general ward, increasing to 1 to 3 for patients at level 2[4] (HDU) and reaching 1 to 2 for patients at level 3 (ICU). Patients discharged per day are about 6.1 (2,233 discharged per year). The majority of patients is classified as level 2 and require a lot of close observation and interventions.

In summary, the HDU was chosen as the study setting within this PhD for following reasons: 1). Patients are critically ill and this makes them much more dependent on nursing care; 2). Nurses in HDU are the main caregivers; 3). To cover patients' needs, nurses' interventions should be timely, accurate, safe and of the required quality and 4). there is little evidence to date that has explored the relationship between the nursing staff characteristics and patient outcomes in the ICU (only 9 of 55 studies included in one systematic review were performed in ICU (Subirana et al., 2010).

5.3.3. HDU Organisation and Characteristics

In this section HDU organisation and characteristics which may influence patient outcomes and safety are presented so as to enhance the understanding of that context and facilitate the description and interpretation of study findings.

The study site's hospital nursing organisation is based on management by objectives that involve setting quality indicators in relation to the goals to be achieved. Every year, the director of nursing with supervisors and nurses from each unit review the clinical practice and agree on which goals are to be accomplished in the following year. These activities were important in the study context because they promoted interventions related with the topic under study (proper patient identification, improve comfort,

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[4] One to three nurse patient ratio is higher than the 49 whole time equivalents (WTE) for a six bedded unit, which is the RCN recommendations

minimise falls, safe administration of blood components, readiness of CPR equipment and skin care). This would then suggest that nurses in the HDU were aware of patient safety issues and the need to perform interventions to decrease any risk.

Care delivery was organised in four nursing shifts, morning shift (MS), working 7 hours, from 7am to 2pm; afternoon shift (AS), working 7 hours, from 2 to 9 pm, and two nights shifts (NS), with 10 hours working, from 9pm to 7am. Each shift was composed of 4 registered nurses and 1 nurse auxiliary for each unit and from Monday to Sunday providing care 24 hours a day. Most registered nurses and nurses auxiliaries work full time but could apply to work part time for 30 hours and / or 50% of whole full time hours for family reasons.

The working week was about 37.5 hours. On day shifts, MS and AS, the composition can be changed every day due to the calendar of the days off. NS work was scheduled in two teams (NS-1 and NS-2) which worked in cycles that were repeated every two weeks. Thus, NS-1 works Monday, Tuesday, Friday, Saturday and Sunday and next week works Wednesday and Thursday. NS-2 for the same period complemented this cycle so in the first week works Wednesday and Thursday and the second week Monday, Tuesday, Friday, Saturday and Sunday, at the end of these two week the cycle starts again. Night shift composition was more stable than day shifts because nurses days off are included in the shift schedule.

There were two medical teams in the HDU, one for patients with gastrointestinal bleeds and the other for the rest of the patients. There was also a physician head of unit and a nurse supervisor engaged in supervision and management tasks. Non-healthcare staff consisted of an administrator who worked Monday to Friday and took on all administrative tasks of the unit and the cleaning, maintenance and storage staff.

In 2003 Hospital de Sant Pau began a sequential transfer to a new building north of the old one; in September 2009 the new HDU in which the study took place started to operate. HDU, located next to the emergency department and ICU, is composed of 24 beds, distributed in two units A and B with 12 beds in each (see Figure 5.1). The central control units are represented in Figure 5.1 by the letters Unit A and Unit B. These allow direct visual control of most rooms except rooms numbered 1, 5, 8 and 12 for unit A and rooms numbered 13, 17, 20 and 24 for unit B.
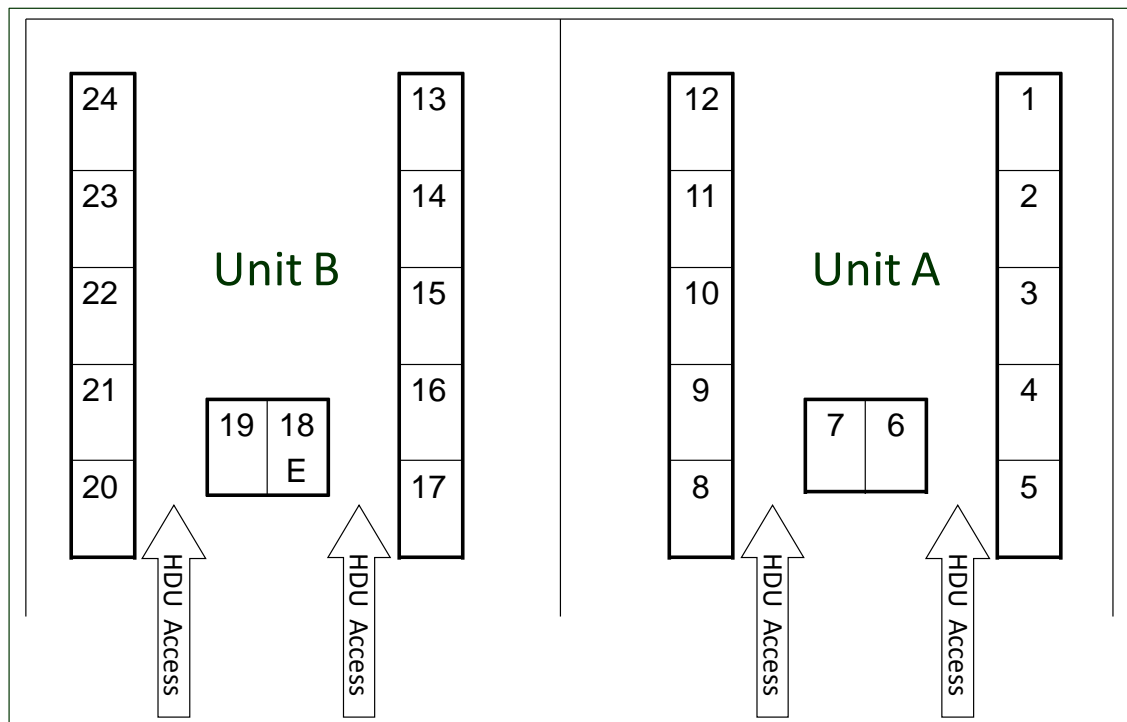
Figure 5.1: HDU Structure and Rooms' Distribution

5.4. Ethical Issues

Ethical approval was obtained from the *Hospital de Sant Pau* Ethics Committee, *Universitat Autònoma de Barcelona*[5] which included, besides the authorisation to carry out the study, the permission for use of the hospital data set of patients and nurses following the requirements of the Spanish Law on Data Protection[6]. In all databases participants' identification was encoded; an identification database which included participants' names and corresponding code was kept separate from all other files and was only accessible to the researcher with a security number.

For the prospective observational study, Study I, the institutional research ethics committee agreed that research ethics approval was not needed as patients' and nurses' informed consent was not necessary for their inclusion. This section presents how ethical issues were addressed in the exploratory interview study, Study II, following the ethical principles of respect for persons, beneficence and justice.

Respect for persons covers respect for autonomy and protection of persons with diminished autonomy. It relates to participants' decisions about whether to take part in

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[5] Refer to Appendix C for Copy of Ethics Approval

[6] *Ley Orgánica 15/1999, de 13 de diciembre, de Protección de Datos de Carácter Personal* viewed 7 February 2011 < http://www.boe.es/boe/dias/1999/12/14/pdfs/A43088-43099.pdf

the research or not and involves ensuring an act of choice that must meet three conditions: intention, knowledge and absence of external control. Intention indicates desired actions, knowledge refers to the degree of agreement or understanding and absence of external control may be affected by coercion, manipulation and persuasion.

To ensure accurate information about the study to the nurses, face to face information sessions with HDU nursing staff took place in September 2009. Four information sessions were scheduled at participants' convenience, one for each nursing shift; specific design details were provided to appraise the launch of the studies and the need for nurses collaboration. Information for patients was provided to each patient who met the inclusion criteria when s/he had received a diagnosis. After providing face to face information with potential participants, specific information sheet[7] for patients, nurses and supervisor, were available in addition to specific informed consent form[8] that integrated the requirements of the Data Protection Spanish law[5] and addressed the voluntary nature of the study. The information sheet also recognised the participant capacity to understand the explanation and make decisions based on the information provided. The informed consent form also outlined the option to withdraw from the study at any time without influencing care received, the confidentiality of the process as well as making it clear that there were no known risks associated with the study. The study information sheet outlined the option to disseminate the study findings from the oral or written form, that all records in this study remained confidential and how the researcher (myself) could be contacted to answer any questions (my telephone number and e-mail address were included).

When necessary during or after face to face information sessions, questions or doubts were answered. Only when the participant, patient or nurse, indicated that they had enough information to make a decision to participate in the study, was informed consent obtained. In some instances at the request of the participant this was addressed at the information session and the decision to participate was taken immediately. Acceptance to take part in the research was considered to have taken place when a patient or a nurse delivered a signed copy of the informed consent form. Additional to participant's signature, the informed consent form was also signed by me and a third

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[7] Refer to Appendix D for Copy of Patient Information Sheet

[8] Refer to Appendix E for Copy of Informed Consent Form

person who could be the supervisor when the participant was a nurse, and in the case of patients, a witness or supervisor present at the time of study information session.

Patients and nurses voluntarily took the decision to participate in the study based on broad and in depth information about their participation. All patients possessed sufficient mental capacity to understand the information, to make a reasonable decision on participation and to understand and appreciate any implications of their decision. Vulnerable patients were considered to be those with diminished ability to judge due to age or a decline in mental capacity and patients who did not know their medical diagnosis, as this situation could involve stress for them. These patients were not recruited; they did not meet the inclusion criteria as described later.

The second ethical principle, beneficence, refers to the ethical obligation to maximise benefits and minimise harm and error. In this research, participants were informed that they were not at risk of suffering physical damage during the in-depth interviews or focus groups but the evidence of reporting experiences and perceptions could have implications on an emotional level. Particular attention was therefore given to the design, researcher competence and protection of the participants' wellbeing specially participants' comfort during interviews and participants' data safety, including the way in which data were stored. Privacy, anonymity and confidentiality were protected by assigning code numbers and pseudonyms to each participant; this was stored in a password protected file accessed only by the researcher and kept separate from all other files. Study data was stored in a locked filing cabinet located in the researcher's office in the Nursing School building; no one else has access to this cabinet. A password protected web site was used to interchange data between researcher and transcriber and translator. Furthermore to ensure data confidentiality during the whole research process, the translator and audio-typist had signed a commitment to data confidentiality[9].

The principle of justice refers to the ethical obligation to treat each person according to what is morally right and appropriate. All participants that met inclusion criteria were considered for participation, they all had the same advantages and benefits of participating and were informed that were able to withdraw at any time. Because I had been introduced myself as a nurse, I explained very carefully to each participant that my role in the study was as a researcher, meaning that if any questions about patients' health status arose, this would be referred to the health care professionals in charge. No reward

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[9] Refer to Appendix F for Copy of Data Confidentiality Commitment

for patient participation was given. At the end of the focus groups without being previously announced, nurses received a small present to acknowledgement their participation.

5.5. Research Population

Population refers to a group of individuals, patients or nurses, who share the same common characteristic (Polit & Beck, 2008:761). The study's target population was patients admitted to a HDU and nurses who work in this type of unit. The accessible population, overall cases that meet designated criteria and are available as subjects for both studies, were patients admitted to the HDU and nurses who took care of these patients. The Study I sample was patients admitted to the HDU and nurses who take care of them directly (registered nurses and auxiliary nurses) and indirectly (nurse supervisor) during the study period. Participants in Study II also participated in Study I. The reason focus lay on patients was because they were cared for by nurses, and interest lay in exploring nursing impact on them. Additionally, only the nurses' perspective as healthcare professionals was addressed as the intention was to examine what and how nursing care influences patients' outcomes.

5.6. Study I: Prospective Observational Study

The research question that drove this study was 'What are the structure and process variables related to nursing that influence patient outcomes and safety in a high dependency unit?' To address this research question a prospective observational design was selected as the best possible method to identify the interrelationship or association between nurses' and patients' variables, through studying the effect of a potential cause that cannot be manipulated. Furthermore the study aspires to identify a tendency for variation in nursing variables to be related to variation in patients' variables. Patients and nurses variables included are presented in Table 5.4 and are those most frequently reported in the literature previously considered in part I of this thesis.

Among patient variables included were those related with patients' outcomes, patients' safety incidents and patients' conditions variables. Patients' outcomes variables studied were the most frequently cited in similar studies (Subirana et al., 2010). In relation to patient safety incidents those selected were those in which nurses' interventions may

have a direct influence. Patients' conditions variables were recorded because patients' health status in HDU was related to and may influence the patient's recovery.

Among nurse variables considered were structure, process and outcomes variables. This data collection enabled reflection of nurse characteristics (structure variables), their perception of autonomy while caring and the quality of care provided (process variables) and as nurse outcomes variables, nursing needlestick injuries during the process of care were recorded because evidence suggested that this is related to nurse staffing and nursing organisation (Aiken et al., 1997; Clarke et al., 2002; Vahey et al., 2004; Watterson, 2004).

When analysing variables from their possible correlational relationship, the dependent variables were patients' outcomes and patients' safety incidents which were influenced by the independent variables which in this study were considered to be nurse structure variables. Also possible confounding variables were judged to be patients' characteristics variables, nurses' process and nurses' outcomes variables. Details of study variables are provided in this data collection section; how the empirical relationship was demonstrated between them is reported in the data analysis section.

5.6.1. Participants

The sample consisted of all patients and nurses that met the following inclusion criteria:

− All consecutive patients admitted to the HDU from October to December 2009

− All nurses (registered and auxiliary), either permanent or temporary staff that worked in the HDU from October to December 2009

Because the aim was to examine the relationship between nursing structure and process variables and patients' outcomes and safety, all patients admitted to the HDU were included with no exclusions related to the length of stay or type of illness. Similarly, all nurses involved in the care of the patients in the HDU were included, whether they were permanent or temporary staff working the whole period or one shift during the study. The study sample consisted of 501 patients (all patients admitted during the three months of study) and 66 nurses (who looked after those patients).

5.6.2. Data Collection

Two electronic databases were built, one for patient data and one for nurse data, to record variables related with the two types of study participants. These databases were used to generate data collection sheets for nurses and patients data. In the databases participants' identities were coded. A third database built for the participants' names and corresponding codes was accessible only to the researcher and kept separate from all other files with a security number to access it. Data from patients were documented from the hospital database as well as patient clinical records. Data from nurses was verified by nurses after completing nurses' data collection sheet in addition to staffing data that comes from the nurse's supervisor.

All patients and nurses that meet the inclusion criteria were selected for the study. Each working day, data from patients and nurses were collected; data from patients admitted during the weekend period were collected retrospectively on Mondays. When data collection was not possible, information was retrieved from hospital archives and databases during and at the end of the study period. Table 5.4 indicates the variables under study grouped as patients' and nurses' variables.

Table 5.4: Variables Under Study

	Confounding variables		Dependent variables	
	1. Patients' characteristics	**2. Patients' outcomes**		**3. Patients' safety incident**
Patients variables	· Age[1], gender · Type of illness · ICD-9 · Charlson comorbidity index (CCI)[1] · Cardiovascular diseases · Risk factors · Location prior to admission · Location at discharge · Shift on admission · Shift at discharge · *Patient turnover* · *Closely monitored patient*	· Mortality · Failure to Rescue · Readmission · Length of Stay · Pain		· Nosocomial infections (NI) · Type of NI · Falls · Medication errors · Pressure ulcers · Surgical bleeding · Blood transfusion events · Adverse drug events · Life-threatening situations
	Independent variables			
	4. Nurses Structure	**5. Nurses Process**		**6. Nurses Outcomes**
Nurses variables	· Age[1], gender · Professional category · Work situation · Shift · Educational level · Years of experience[1] · Professional level · *Nurse turnover* · *Nursing staff profile*	· Quality perception[2] · Autonomy perception[2]		· Needlestick injuries

[1] Continuous variables; [2] discrete variables; *active variables in italics*

All variables under study were categorical variables except those indicated with 1 (these are measured on a continuous at least interval scale) and those indicated with 2 (these are discrete variables, with values varying between 0 and 10, that is at least ordinal level measurement). Those variables created by the researcher, and named as active variables, are indicated in italics: patient and nurse turnover, closely monitored patients and nursing staff profile.

Patients' variables are differentiated between confounding variables (whose presence affects the variables being studied) and dependent variables (whose occurrence is to be predicted or explained). Nurses' variables are the independent variables under study (whose effect on the dependent variable can be observed). Donabedian's framework (Donabedian, 1966) was used as a basis to group nurse variables within structure, process and outcomes variables.

In the next subsections detail of these six big groups of variables (Table 5.4) 3 related with patients (characteristics, outcomes and safety incidents) and 3 related with nurses (structure, process and outcomes), is provided. Some of the variables labels such as mortality or nosocomial infection integrate a group of variables about the same topic. These cases are detailed in each Table, describing the variables that integrate the group.

5.6.2.1.   Confounding Variables

1. Patients' Characteristics Variables

Patient re-existing, ill-health circumstances must be taken into account as these may affect the independent and the dependent variables, this is, they may act as confounding variables. These variables included patients' demographics and basic illness data in addition to admission and discharge related information, in particular: age and gender; type of illness (medical or surgical); International Classification of Diseases Ninth Revision (ICD-9); Charlson Comorbidity Index (CCI); cardiovascular diseases; and other risk factors.

Patient medical diagnosis at discharge was identified from ICD-9 codes in main diagnosis discharge field. In addition to the main medical diagnosis, variables to calculate CCI were recorded. CCI contains 19 categories of comorbidity and their associated weights; the CCI provides an overall comorbidity score. The presence of comorbidity conditions provided an indication of health status and increased likelihood of one-year mortality. To calculate CCI total age adjusted, age was coded in decades, each decade of age over 40 would add 1 point to risk; the age points were added to the score from the comorbidity index. Using calculations from the seminal paper (Charlson et al., 1987) the one year

mortality rates in 685 patients for the different scores were '0', 8% (588); '1', 25% (54); '2', 48% (25); '≥ 3', 59% (18).

Besides risk factors, cardiovascular diseases variables were also recorded. Cardiovascular diseases was considered to be the presence of arrhythmia, or a diagnosis of aortic stenosis or hypertension before HDU admission. Risk factors included dyslipidemia and cigarette or alcohol consumption immediately before HDU admission.

Basic information on admission and discharge consists of location prior to admission (emergency, recovery, hemodynamic, ICU, general ward and home-primary care), location after discharge (general ward, home, ICU, recovery, hemodynamic and other centre), admission shift and shift at discharge (morning, afternoon, night-1, night-2).

As a last variable within patients' characteristics, closely monitored patient variable was added to identify those patients that required surveillance every 15 minutes for more than 6 hours at any time during the patient's HDU admission, as this may also influence the independent and dependent variables relationships.

5.6.2.2. Dependent Variables

2. Patients' Outcomes

A summary of the patients' outcomes variables details (variable group, name, definition and data source) is presented in Table 5.5. The first group of variables within patients' outcomes was related to *mortality*. In-patient mortality was recorded when death at hospital discharge was coded on patients' hospital database. A specific differentiation was made between patients who died in the HDU or in other hospital settings. Mortality within one, three and twelve months of admission was also measured.

The second group of variables was about *failure to rescue* (FTR). Included within that group were FTR defined as the death of a patient with one of five life-threatening complications and the reason related to FTR which considered the five life-threatening complications (Needleman et al., 2002).

The third group considered as a patient outcome was *readmission.* In the study readmission was considered when a patient was readmitted within 72 hours, 1, 3 or 6 months after discharge (Leng et al., 1999; Heggestad & Lilleeng, 2003; Demir et al., 2008). The administrative database was reviewed to see if any individual patient was admitted more than once. When this situation was detected it was considered as a readmission. All patient records were reviewed to detect if these new admissions were linked to an

incident or an illness complication as well as an exacerbation of chronic disease, a new illness episode or early discharge.

Table 5.5: Patients' Outcomes Variables

Variables group	Variables name	Definition	Data sources
Mortality	In-patient mortality (HDU and hospital) 1 month mortality 3 month mortality 6 month mortality 12 month mortality	Death at HDU Death at hospital Death at or within 1, 3, 6 or 12 months of admission	HDU record Hospital database
Failure to Rescue	Failure to rescue	Death from pneumonia, shock or cardiac arrest, upper gastrointestinal bleeding, sepsis, or deep venous thrombosis	HDU record Hospital database
Readmission	Readmission before 72h Readmission within 1 month Readmission within 3 month Readmission within 6 month	Patient was readmitted within 72 hours, 1, 3 o 6 months after discharge	HDU record Hospital database
Length of Stay	Length of hospital stay Length of HDU stay Length of stay before HDU	Length of time in hospital Length of time in HDU Length of time in hospital before HDU admission	HDU record Hospital database
Pain	Presence of pain Pain after intervention to relieve it	Patient's pain intensity measurement at baseline and after analgesic intervention	Nursing record

A fourth group of variables comprised *length of stay.* This was calculated in three ways as: the difference between day of hospital admission and day of hospital discharge; the difference in days between day of HDU admission and day of HDU discharge; and length of hospital stay before HDU admission as a difference between the day of hospital admission and the day of HDU admission.

As a final outcome variable we analysed patient *pain* data was accessed from nursing records. Nurses consistently and at least once per shift, using a visual analogue scale or pain rating scale, requested patients to indicate their level of pain. Data were also collected on when a patient reported remaining in pain if interventions designed to alleviate this pain and improve comfort were subsequently evaluated in the same shift.

3. Patients' Safety Incidents

In this section key variables that influence patients' safety and as a consequence modify patients' evolutions and outcomes (Table 5.6) are included. The following is a description of patients' safety incidents incorporated in this research. *Nosocomial infections* (NI) defined as any infection that originates in hospital included if a specimen collection was performed during patient admission to the HDU, if a test was positive or

negative, the number of positive specimens collected and the time of collection. According to the hospital infectious diseases unit guidance, we analysed the period of specimen collection to delineate HDU nosocomial infections, as a positive specimen collection in HDU until 72 hours after discharge. In addition data were collected on the main nosocomial infections (*type of NI*), i.e. bloodstream, surgical, urinary tract, respiratory tract and intravascular catheter, and nosocomial infection risk factors, namely: if the patient had a urinary catheter, if mechanical ventilation was required and the number of catheters during HDU admission. Nosocomial infection data were obtained from the microbiology unit register, HDU records and hospital database.

Table 5.6: Patients' Safety Incidents

Variables group	Variables	Definition	Data sources
Nosocomial infection	Specimen Collection; Positive Specimen Collection; Number of Positive Specimen Collected ;Time of Specimen Collection: prior to HDU; HDU; after HDU up to 72 hours	Infection originating or taking place in a hospital, acquired in a hospital, occurred within 72 hours after hospital admission	Microbiology unit register HDU record Hospital database
Type of nosocomial infection	Urinary tract and presence of urinary catheter; Surgical site; Respiratory tract and mechanical ventilation; Blood stream; Intravascular Catheter-related Infections and Number of catheters	Most frequently occurring sites of infection in hospitalised patients: urinary tract, surgical site, pneumonia, primary bloodstream and Intravascular Catheter-related Infections	HDU record Hospital database
Falls	HDU Falls	Patients fall unintentionally	HDU record Self report sheet
Medication errors	Medication errors Type of error: Prescribing, Dispensing and administration	Any error in the prescribing, dispensing, or administration of a drug	HDU record Self report sheet
Pressure ulcers	Pressure ulcer in HDU Pressure ulcer at hospital discharge in any secondary diagnosis field (ICD-9)	A sore area of skin identified in HDU record or at discharge report	HDU record Hospital database
Surgical bleeding	Surgical bleeding	Bleeding after a surgical procedure	HDU record Hospital database
Blood transfusion events	Blood transfusion; Adverse transfusion event	Blood or blood components administration; Acute or late adverse effect as a consequence of blood transfusion	HDU record Hospital database
Drug events	Adverse drug events; Drug if adverse event occurs	Acute or late adverse effect as a consequence of drugs	HDU record Hospital database
Life-threatening situation	Cardiac arrest (CA) and Respiratory failure (RF)	CA: An abrupt halt in the pumping action of the heart RF: Lungs inability to perform their basic task	HDU record Hospital database

A fall is defined as *'an event whereby an individual comes to rest on the ground or another lower level with or without loss of consciousness'* (Royal College of Nursing,

2004a). *Falls* occurrence was recorded in addition to those situations in which the patient was found standing beside the bed and a fall had not occurred. Patient falls were documented from self report or when it was included in patient records. The same procedure was used for *medication errors* and error type (i.e. produced during prescription, dispensing or administration). Data for the variables described below were obtained from the nursing records (HDU record) and discharge reports (hospital database).

The incidence of *pressure ulcers* was recorded when the detection of an ulcer in the HDU occurs and was included in patient records (pressure ulcer in HDU) and when it was listed as discharge hospital diagnosis (pressure ulcer at hospital discharge in any secondary diagnosis field (ICD-9). Besides these patient safety incidents, the following events were recorded: the presence of *surgical bleeding* in surgical patients, *blood transfusion events, adverse drug events* and the occurrence of *life-threatening situation* which included cardiac arrest and respiratory failure, when these occur within the HDU. Surgical bleeding was included when bleeding led to further surgery (Ginzburg & Dujardin, 2011). Safe administration of blood components was considered also as a HDU quality outcomes indicators as blood transfusions in the HDU are undertaken using a protocol to minimise the risk of adverse events. Identification of adverse drug events was completed taking this data from patients' records. Life-threatening situations were also recorded from registers of cardiac arrest or respiratory failure.

5.6.2.3. Independent Variables

4. Nurses Structure Variables

Variables within nurses structure were: age; gender; professional category (registered nurse, auxiliary nurse); work situation (temporary , permanent); shift (morning, afternoon, night shift-1, night shift-2); educational level (higher degree and Critical Care high degree (CCP)); years of experience (at hospital and in the HDU) and professional level (professional hospital level, 1,2 ,3 or 4). In 1994 *Hospital Santa Creu i Sant Pau* approved the credentials of clinical registered nurses according to designated criteria settling out four levels of nursing practice. These levels constituted a path for career promotion for professional registered nurses based on years of experience and training and research activities. Higher levels indicate a greater degree of expertise.

Nurse turnover was calculated for every patient as the number of different nurses that took care of the same patient during each patient admission in the HDU, divided by

patient length of stay in the HDU. Finally information was recorded regarding every nurse at work for each shift and for each day during the three month observation period to build a nursing staff profile for each individual patient.

5. Nurses Process Variables

Information about nurses' process variables was collected using two visual analogue scales which allowed measuring the subjective experience about quality and autonomy. Nurses were asked to rank, between 0 and 10, their perception of the level of the quality of care and their capacity to work autonomously in the HDU in relation to nurses' process of care. The scales provided a numeric score to place nurses' perceptions on a continuum in order to be able discriminate quantitatively among nurses. This measure was carried out to determine a numerical value in relation to the study variables while recognising its simplicity. The limitations of the autonomy measure could had been overcome with the use of suitable assessing instrument such as the five-category professional clinical autonomy scale (Kramer & Schmalenberg, 2006:37) or for both variables, autonomy and quality, by means of methodological triangulation. It should however be noted, as reported in Chapter Eight (nurses' data), that discussions within the focus groups confirmed the significance of their perceptions of quality and autonomy, thus providing some supportive evidence on potential reliability of the rating assessments.

6. Nurses Outcomes Variables

Outcome variables for nurses considered in this study were needlestick injuries, the sources of injury (1. Syringe needle; 2. Butterfly needle; 3. Suture needle; 4. Insulin needle; 5. Medication); protection from injury, (1. Hand-washing before the procedure; 2. Hand-washing after the procedure; 3. Gloves used) and the situation in which the injury occurred (emergency or non-emergency). According to the literature needlestick injuries were correlated with poor nurse staffing, in addition, nurse staffing and organisational climate are key determinants of needlestick injuries (Clarke et al., 2002). This variable was measured because it constitutes an objective evaluation of nursing safety.

5.6.3. Data Analysis

Descriptive analysis of the patient and nurse data involved overall summaries, using the mean, standard deviation and range for the continuous variables and number and proportion for categorical variables. This and all other analyses were executed using SPSS version 17.0 software (SPSS, Chicago, IL) and an alpha level of <.05 used for assessing

statistically significance. Inferential statistical analysis was applied to determine if there is a statistically significant relationship between the variables under study. Continuous variables have been compared between groups using the independent-sample Student t test or analyses of variance (ANOVA), and for categorical variables by the chi-square test. Comparisons had been made between genders for patients' data and between shift for nurses' data.

It is recognised that the use of parametric tests and sophisticated multiple regression analysis requires a number of assumptions to be made about the data, for example, in relation to levels of measurement, underlying normal distributions and (for regression) additivity. Checks were made as part of the analysis to try to address these issues. Firstly, as noted in relation to Table 5.4 (p.84) all the variables are either continuous or discrete but measured on at least an ordinal rating scale. The latter are here treated as if the measurement was at least an interval level (an approach that is commonly taken with such visual analogue scales), in order to include the variables in the overall analysis. Moreover, the regression model included categorical and continuous variables (according to table 5.4. classification). A categorical exposure with more than two categories was included in the regression equation as a dummy variable, each representing the category of exposure containing the highest proportion of subjects as the baseline category, and discrete variables were treated as usual as continuous variables. Secondly, in relation to the assumption of normality it was found that the variables' distribution was markedly normal. In addition, and a point strongly made in the statistical literature, the sample size was sufficiently large enough in any case to make an assumption of an underlying normal distribution. Thirdly, the limitation of the assumption of an additive model, that is, each variable included in the regression model both acts independently and adds to the effect of the others, is recognised. The model presented assumes that each of the exposure variables included acts independently and contributed to explain the variance in an additive manner. As is indicated below, the analysis could be taken further to explore a modification of this assumption, exploring possible interactive effects (for example, one variable modifying and enhancing or reducing the effect of another).

Logistic regression models were applied to estimate the effects on dependent variables (patients' outcomes and patients' safety incidents), using as independent variables those from nurses (nurses' structure and process variables), and adjusting for confounding variables (patients' characteristics). To assess the overall association between independent variables (nurses' structure and process variables) and dependent variables

(patients' outcomes and patients' safety incidents), a nursing staff profile for each patient was calculated based on the information regarding every nurse at work for each shift and for each day during the three month observation period. This profile included for every individual patient: nurse turnover, high nurse turnover, nurse age, professional category, years of experience in hospital and in HDU, nurses with higher degrees, nurses with higher degrees in critical ill patient and permanent work situation nurses. Mean, standard deviation and range (continuous variables) and number and proportion (categorical variables) were calculated for these seven nurse summarising characteristic variables that constituted the nursing staff profile variable. A high patient turnover and a high nurse turnover were defined as when the rate was greater than or equal to the mean plus 1 SD for each patient, and a dummy variable for these items was merged into the patients' demographic variables database. For every patient the information that corresponded to his period of admission was analysed.

5.7. Study II: Exploratory Interview Study

Five research questions guide this exploratory interview study. The first one was shared with the prospective observational study, and the other four designed to gain further insight into patient and nurse perspectives:

– What are the structure and process variables related to nursing that influence patient outcomes and safety in a high dependency unit?

– What aspects of nursing care do patients perceive as influencing their outcomes and safety in a high dependency unit?

– What do patients perceive as the outcomes of nursing in a high dependency unit?

– What aspects of nursing care do nurses perceive as influencing their outcomes and safety in a high dependency unit?

– What do nurses perceive as the outcomes of nursing in a high dependency unit?

The questions are a manifestation of nursing phenomena therefore grounded theory was the research method used to represent this reality. From a constructivist approach, the aim was to identify new or different structure and process variables related to nursing that influence patient outcomes and safety as well to understand, confirm or challenge those findings from the literature (Subirana et al., 2010). Interest lay in exploring patient

and nurse perceptions of the elements of nursing care that affect patient outcomes and the safety of care. Study II details are discussed in the following subsections.

5.7.1. Participants

Because the aim was to gain understanding, the need was to ensure that the sample was as diverse as possible to identify the full range of factors that were associated with the phenomenon in addition to guaranteeing the inclusion of relevant situations, interventions, processes or events (Kuzel, 1999; Ritchie, 2009). Therefore the sample was purposefully selected in relation of what make sense to answer the question to get the most valuable information. As stated in previous sections (5.2 and 5.5), participants in Study II were also part of Study I participants.

5.7.1.1. Patients Sampling

To study the relationships between patient outcomes and nursing, the following inclusion and exclusion criteria were used:

Inclusion Criteria:

- Patients admitted for more than 24 hours in the HDU, during working days from 8 am to 5 pm

- Glasgow coma score[10] >14

- Able to provide informed consent

- Mental capacity to participate in in-depth interviews

- No previous admissions to the HDU

- Patient characteristics match one of the 16 typologies (Table 5.7)

Exclusion Criteria:

- Patients admitted for more than 24 hours in the HDU during weekend starting at 5 pm on Friday afternoon, finishing on Monday morning at 8 am

- Patients admitted for more than 24 hours in the HDU during bank holidays starting the previous day at 5pm and finishing the day after at 8 am

- Patients that during their admission in the HDU must be transferred to the ICU

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[10] Glasgow Coma Scale is a neurological scale to assess level of consciousness. Total score is the sum of the scores in three categories eye opening (4 items), verbal (5 items) and motor response (6 items). The range of score is between 3 and 15, patients with score fewer than eight patients are in coma

- Patients admitted in the HDU because there are no beds available in the ICU

- Patient characteristics match one of the 16 typologies but have already recruited more than two patients in the typology

The reasons for selecting these criteria were that they related to patient and nurse interactions and the process of nursing care. Those patients who interacted with the nursing staff for less than 24 hours were not suitable for the study because during the first 24 hours in a HDU setting, patients experienced changes in health status making it difficult for them to focus on the characteristics of care received. To capture the patients' perspective it was necessary that s/he was conscious during the whole HDU admission. Accordingly, included patients with a Glasgow coma score above 14, perceived as able to provide informed consent and had enough mental capacity to participate in in-depth interviews. Patients with previous admission experiences were excluded for the reason that this can influence the perception of the current admission, so patients previously admitted to the HDU were not included. All patients who met the inclusion criteria agreed to participate in the study and no patients refused to participate after the interview.

For the purposeful sampling, each patient's medical history was reviewed and every new patient admitted to the HDU talked to. At the beginning interest lay in patients with incidents (nosocomial infection, falls, medication errors, pressure ulcers, surgical bleeding, blood transfusion events, drug events, life-threatening situations) but over time it became evident that more conditions needed to be considered in order to ensure diversity; the decision was made to move to a more multiple approach to optimise the chances to answer the research questions.

To identify patient groups of special interest, a multi-layered crosstab sampling frame was built (Table 5.7) in which one input was safety and the other was outcomes. Within safety were considered the number of patients' conditions, indicated as a single or multiple. When patients presented with only the reason for admission and had no comorbidities they were considered as single; those patients who had comorbidities added to the reason for admission were considered as multiple. Comorbidities included: congestive heart failure, arrhythmia, aortic stenosis, hypertension, cancer, COPD, diabetes mellitus, dyslipidemia. Invasive procedures jeopardize patient safety and influence patient outcomes. Invasive procedures were considered to be low when the patient during HDU admission had a peripheral or central venous catheter, nasogastric tube or urinary catheter. They were considered to be high when the patient during HDU admission had an

endotracheal tube, surgery, cardiac catheterization, gastrointestinal endoscopy or pacemaker placement. All these aspects were explored because if patients had multiple conditions and more invasive procedures had to be performed, then nursing interventions had to adapt to increased patient needs. These different situations may have an impact on patient safety. The aim was to sample at least one patient in each shadowed cell although the chances of fulfilling the conditions were not the same for all cells.

Table 5.7: Patients Multi-Layered Crosstab Sampling Frame

SAFETY	Nº conditions	Invasive procedures		OUTCOMES						
				symptom and signs control						
				rapid			longer			
				pain control						
				rapid	longer		rapid	longer		
SAFETY	Single	Low		1	1	2	1	1	2	4
		High		1	1	2	1	1	2	4
				2	2	**4**	2	2	**4**	8
	Multiple	Low		1	1	2	1	1	2	4
		High		1	1	2	1	1	2	4
				2	2	**4**	2	2	**4**	8
				4	4	8	4	4	8	**16**

Associated with outcomes we considered symptoms, signs and pain control. A quick response to symptoms, signs or pain control was coded as rapid when control occurs within 2 hours after assessment or identification and was established as longer when control of symptom, signs or pain occurs after two hours. Within the symptom and signs were included: dyspnea, vomiting, gastrointestinal bleeding, bradycardia, hypertension and hypotension. In relation to gastrointestinal bleeding control means that at least treatment was initiated, defined as rapid within 2 hours and longer after that period. Within the pain category were included all types of pain. A good outcome of the adequacy of nursing intervention was considered the control of symptoms and signs including pain.

The type of patient admitted to the HDU and the age of the reference hospital population made multiple conditions and high number of invasive procedures more common. It was therefore easier to fill those cells that match with multiple conditions and longer symptom and signs control in contrast with those that match single conditions and rapid symptom and signs control. The purposeful sample illustrated in Table 5.7, allows

identification of 16 types of patients, created from the multi-layered crosstab. We planned to include at least one patient in each cell.

5.7.1.2. Nurses Sampling

All nurses working in HDU during the study period were invited to participate in the study. When a nurse who had not attended the information sessions was identified in HDU on any of the shifts, the researcher asked her / him if it was possible to talk to her / him about the study and then invited her / him to participate in the focus groups.

The inclusion and exclusion criteria were as follows:

Inclusion Criteria:

– All nurses that work at least 15 days from October to December 2009

Exclusion Criteria:

– Nurses that were on holiday or away from October to December 2009

Nurses sampling was stratified purposefully according to their shift to facilitate comparisons between the four shifts (Kuzel, 1999). The nurses' sample consisted of a total of 22 nurses, 19 registered nurses and 3 auxiliary nurses distributed as follows: from morning shift 8 and 1, from afternoon shift 6 and 1 and from night shift 5 and 1 registered nurses and auxiliary nurse, respectively. Ten nurses refused to participate: one nurse on the afternoon shift for personal reasons and the other nine from one of the night shifts because they were not available for a focus group due to family responsibilities.

5.7.2. Data Generation

This section describes my relationship as a researcher with the participants and how data was generated from field notes, in-depth interviews with patients and focus groups and interviews with nurses. Over a three month period, I the visited HDU once every working day during the morning or afternoon shift. I repeated the same schedule daily: I arrived at the HDU and shared a few moments with HDU secretary who knew about admissions and discharges, I took notes on these and then met the nursing supervisor who knew if they had had major incidents or situations in relation to outcomes and patient safety. After that I went into the HDU where, because I was familiar with the setting and staff, it was easy to identify the best moment to speak to nurses or patients to share information relevant to the study or to inform and ask patients if they wished to participate in the research.

My relationship with the staff is long standing from when I worked in the ICU. I knew most of the HDU staff either because we had worked together or because we had previous contact as a result of the proximity and the continuing transfers and contact between the two units (ICU and HDU). The relationship with nurses was easy and open throughout the study period; the nurses were enthusiastic, actively collaborating in providing information when considering patients' selection for in-depth interviews. This good relationship also facilitated the constitution and development of the focus groups. Given these frequent visits to the HDU and the good relationship with the staff, patients normally welcomed me when I explained that I was a nursing school professor conducting a study on the unit. There were no problems with any patient relationship. As stated in the patient sampling section, all patients selected agreed to participate and no patients declined to participate after the interview.

During my visits to the HDU, besides collecting data for the prospective observational study and interacting with the patients and nurses I acted as a non-participant observer. Following an unstructured naturalistic approach, I focused on aspects related to nurses' interventions relevant to the phenomena under study, nurses and patients' interactions and communication relationships. Special attention was paid to ensure that the time spent in the HDU was enough for data collection and to understand the culture and the participants' point of view. However I did not take field notes in the HDU, but wrote these on the chosen aspects immediately on arrival in my office following my HDU visit. Table 5.8 shows an example of each type of note which refers to a medication error that occurred on October 8, 2009.

Table 5.8: Example of Observational, Theoretical and Methodological Field Notes

October 8, 2009 2:20
Observational field note:
    Today a medication error occurred. There was a novice nurse who did not understand the name of a medication and had consulted an expert nurse. After to specify that patient was diabetic, both have agreed which was the medication name. After that the expert nurse, check the medication record and realises that medication name was similar to the medication of another patient record and that the interpretation they made of the medication name was wrong. Talking with the nurses they explain me that they reviewed and contrasted effectively with physicians the error (illegible prescription). They increased patient surveillance and checked every hour blood glucose levels. Any problem occurs. Expert nurse said that the medication error happened because she had not been able to pay enough attention to the novice nurse query.

Theoretical field note:
    It is important the fact that the novice nurse has consulted the expert nurse, this is an argument for teamwork, recognition of expertise and novice nurse accountability. Note also that the expert nurse indicates that the error occurs because she could not pay enough attention to the novice nurse query; she did not focus on illegible prescription, this supports the argument for expert nurse accountability.

Methodological field note:
    Nurses supervisor and expert nurse aware me about the prescribing error.

Data recording was initiated and classified as methodological, theoretical or inferential and observational notes (Schatzman & Strauss, 1973:37). A colour was assigned to each type of field note to facilitate their identification. Observational notes (green) focused on patients and nurses interactions as well as on nursing activities that may influence patients' outcomes and safety. Theoretical or inferential notes (yellow) referred to a theoretical interpretation of what was going on in the HDU in relation to study topics. Methodological notes (orange) included a description of the development of research activities in addition to my social interaction in HDU.

The following two sections comprise a description of how data was generated from in-depth interviews with patients and from focus groups and interviews with nurses all conducted by the researcher.

5.7.2.1. In-depth Interviews

The procedure used to recruit patients consisted of reviewing their medical history to verify whether they met the inclusion criteria for purposive sampling. Once confirmed, I assessed the patient's current state with the nurse in charge of the patient. Almost always the patients' condition allowed an exchange of words to inform them about the study and request their participation. Although patients were offered the opportunity to be interviewed the day after this meeting, sometimes the patient offered to do the interview the same day. The interview was timed to fit in with the patient's needs and the dynamics of the unit. On the interview day, the patient's state was reviewed again with the nurse in charge and the patient's physician was informed about the scheduled interview. All patients gave their written consent. One patient had given her tacit consent following the information session; the consent form was signed during the HDU visiting time with her husband signing on her behalf.

My researcher background in ICU, my experience using interviews in daily nursing practice, and theoretical foundations of nursing due to my position as a nursing school professor, assisted the interview process allowing an appropriate and respectful use of time during the whole patient experience exchange. Special attention was paid to the patient's comfort, to establish an adequate distance to facilitate communication and to ensure a relatively quiet and private space. All patient interviews took place in the HDU with the room door closed. Patients were sitting on a couch and I was sitting in a chair just in front of them with a table beside us or they were lying in the bed and I sat opposite them on a chair with the bed rail down on my side. The recorder was on the table beside

the bed. It was easy to create a relationship of trust and respect, often very rapidly. To avoid unnecessary interruptions and distractions HDU staff was advised that an interview was being conducted; interruptions occurred only a couple of times.

The interview was composed of an introduction, the interview topic guide, prompts and follows up questions[11]. A pilot interview was conducted to test the topics issues, its introduction and prompts (See Appendix G). The pilot interview was not included in the analysis because the patient was admitted to the old HDU. The pilot interview was conducted with a partner present. The patient was a man, 55 years old, who had had a myocardial infarction. He was accompanied by his wife and they had been visiting Barcelona when he fell sick two hours before boarding the plane home. The patient's wife expressed her feelings about the situation but did not provide data relevant to the study. From this pilot interview, it was confirmed that the interview guide was fit for the purpose of generating the information needed to answer the Study II research questions. It was also considered that it was best to do the individual interview without family present as interest lay in the patient perceptions.

After each interview the participant was given a pseudonym for easy identification in addition to maintain data anonymity and confidentiality. The interview code constructed from the interview number, interview date and the patient code from Study I, was used to label the audiofiles and all other written or computer stored records. At the end of the interview the interview collection and description sheet was filled out. It consisted of a summary of patient key information regarding health status and reflections on the interview process.

5.7.2.2. Focus Groups

In this research focus group interaction was fundamental because it was important to share care experiences as process of care was the main focus of this research. The aim was to learn what the group thinks and feels in relation to the study topic; this was the reason why nurses from each shift were brought together in groups of no more than 8 participants to discuss, from personal experience, the issue of patient care and outcomes within in the context of the HDU (Amezcua M, 2003; Curtis E & Redmond R, 2007). On December 31, I made a proposed schedule for each focus group available to all participants via the notice board in each HDU and asked participants to indicate their

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[11] Refer to Appendix G for the Follow Up Questions

willingness/ availability to attend. Different dates in January 2010 were suggested for the focus group for each shift; with eligible nurses interested in participating, a date was chosen to conform to the preferences of the majority of them. Because this information was provided during a holiday, the majority of nurses filled the data collection sheet and gave informed consent after face to face information. Nurses' data included demographic professional information, gathered for sample description purposes and to collect quality and autonomy of care perceptions in addition to nursing outcomes variables (Study I) that are related with should needlestick injuries during care.

Two of the three focus groups had both a moderator (myself as researcher) and assistant moderator (the nurse supervisor); for the third focus group the supervisor was not available so the researcher assumed both roles. The moderator facilitates the group and guide the discussion while the assistant moderator observes and records any possible inconsistencies between participants (Mansell I et al., 2004). Before the focus group moderator and assistant moderator reviewed their roles together. The researcher's position as a moderator and the supervisor's position as an assistant moderator were considered carefully. It was believed that my relationship with the focus group participants can encourage the group while facilitating guiding the discussion. In relation to the supervisor as the assistant moderator it was believed that due to her knowledge about the HDU dynamics and relationships with nurses her presence could promote the detection of possible inconsistencies.

Focus groups were conducted in the HDU setting. Before beginning each focus group, nurses delivered a signed informed consent form and nurse data sheet, if this had not been completed previously. They also had an opportunity to complete nurse data sheets before the focus group started. Informed consent was obtained when the nurse delivered a signed copy of the consent form meaning that he or she agreed to participate. Nurses were instructed about the focus groups rules which included information about the tape recorder and the note taking by the moderator and assistant moderator. Participants were assured about the voluntary nature of the study, which they could withdraw at any time, that there were no right or wrong answers and encouraged to answer questions freely. Special attention was paid to creating an environment of trust and comfort. Because focus groups were scheduled just before or after shift work, some drinks and food were made available to the participants. The focus groups followed the same topic guide

used for patients[12]. The focus groups began by welcoming everyone, explaining to the participants their role and the rules and dynamics (for example, respect for others' time to talk), providing an overview of subject matter and the purpose of the meeting, clarifying participants' expectations and confirming permission to record. The moderator took notes during the focus group, at the end those notes were summarised to highlight the main topics discussed. At that point a commitment was made to provide the participants with a summary of the results of the study.

5.7.3. Data Analysis

This section presents how the analysis process was performed and a brief description about how NVivo software supported the data analysis. Because this study was conducted in Barcelona, it was also necessary to pay attention to the methods used for translation from Catalan or Spanish to English during the research process.

Interviews and focus groups were audiotaped in their entirety and audio tapes were transcribed verbatim. An experienced external audio-typist was paid to transcribe verbatim; the researcher then crosschecked the transcriptions with the audiotapes for accuracy, erased names and labelled them with a pseudonym before the translation into English. An experienced external translator was paid to translate the original version into English. Further details are provided below in sub-section 5.7.3.2.

Data was analysed using the constructivist approach that guides this thesis, and taking into account my background as a nurse. It is therefore important to highlight that a reflexive stance was taken towards the research process and to draw attention to how the theoretical model developed within this reflexive stance during the analysis (Mills, 2006). Analysis was conducted in Catalan although from the outset, codes were established in English. Translation was carried out for the purposes of communication and discussing the analysis with my supervisors along with presenting the data in English within the thesis.

Data from patients and from nurses were analysed independently because initially I wanted to capture and understand patients' data without or minimising the consequences of interpreting nurse-patient interactions. Analysis from patients' data was therefore undertaken first. A similar approach was considered for the nurses' data as the use of my personal experience as a critical care nurse needed to be avoided. To bridge the two parts,

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[12] Refer to Appendix G for Follow Up Questions

findings were then analysed together and were associated with the findings of the quantitative study. The next section focuses on the analysis of patients' and nurses' data.

5.7.3.1. Codes and Categories Development

The key areas of inquiry in this thesis are the meanings and understandings expressed by patients and nurses in relation to nursing care and its influence in patients' outcomes and safety in a HDU. The methods used in this analysis must be considered within the context of the Constructivist Grounded Theory approach proposed by Charmaz (2006). To guide the content of this section Figure 5.2 presents a general overview of the model of the essential components of GT and the underpinning approach that supports this analysis.
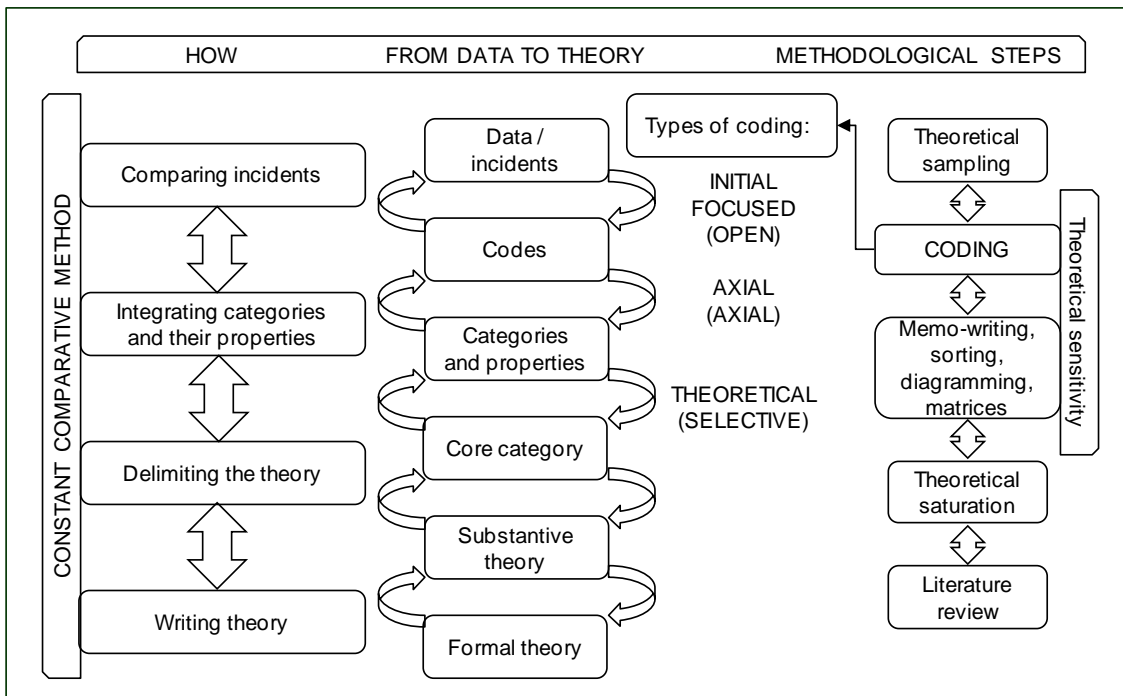
Figure 5.2: Essentials Components of Grounded Theory

From left to right and from top to bottom it is possible to identify three blocks, labeled how, from data to theory, and methodological steps. These blocks must be understood simultaneously and also in a cross cutting manner. According to the seminal description (Glaser & Strauss, 1967:105-113) the first block labeled how, includes the broad data analysis stages up to the drafting of the theory by means of Constant Comparative Method which constitutes one of the main issues in GT. Constant Comparative Method is the common element throughout where every piece of data is compared with every other piece until the last stage, when writing theory is achieved

(Burns & Grove, 1997:75). Constant Comparative Method has not changed over diferent GT approaches and therefore is followed in this thesis as is described below. The second vertical block shows the detail of stages in the evolution from data to theory and the third displays the key methodological steps in GT which are integrated with how to construct theory from data.

The transcripts were read through on several ocasions to gain a sense of the account contained within them. Meaningful chunks of text were highlighted by hand and labelled with the initial codes which generated the bones of the analysis. Figure 5.3 shows the diagram that allow review of some codes after the analysis of the first five interviews. Table 5.9 reveals a bad experience during HDU admission.
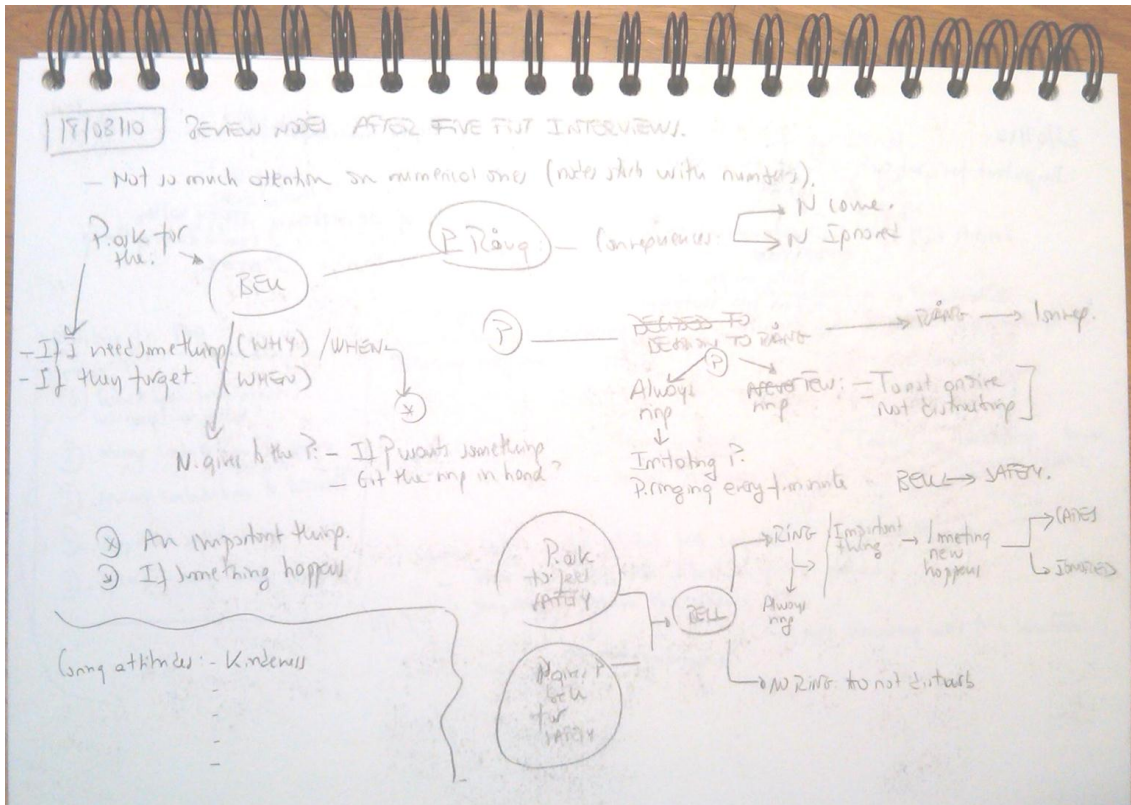
Figure 5.3: Codes Review after the Five Initials Interviews

Taking as an example data from this patient P2, as shown in tables 5.9 and 5.10. the processes were as follows:

My initial interest was to understand and describe why was the patient's experience terrible?, why did this happen?, what was the care that patient described?, how I can define it?, how did this process develop?, were there any relationships with other types of care?, when, why and how does the process change?, was the nurse overloaded?, was it a

normal situation? what were the consequences of the process?, did the patient expect that something should happen and it didn't happen?.

Table 5.9: Example of P2 Excerpt Initial Coding

Initial codes	Participant excerpt
Feeling uncomfortable Negative caring experience Feeling ignored Lack of attention Being distressed Feeling loneliness	It was too much. Just because I wanted them to... I only asked them to make me be comfortable. And as I could, I smoothed the pillow myself , and stayed as I could [..] course, so I asked her ... she ignored me ... I asked her please to give me a sedative ... because I say 'Me, the way I am ... uncomfortable and so... I cannot fall asleep here because... ' I think I would have gone mad (crying) [...] They just ignore me ... they didn't stir... Well, they got moving to make me silent. Well, it was a tragedy

Table 5.9 reveals a bad experience for participant P2 during HDU admission. Participant P2 was a 78 year old lady admitted for lower gastrointestinal bleeding. During the interview she described that after the admission she was lying in bed and was uncomfortable. She used her bell to request help but no one came to decrease her discomfort. The situation got worse, as it was possible to identify from the nurses' records that the patient became disoriented and required sedation to avoid an unsafesituation.

As Charmaz states 'the logic of discovery becomes evident as you begin to code data', questions such those above allow being critical with data which does not mean being critical with participants (Charmaz, 2006:51). Keeping in mind that codes must remain next to the data and must make sense on their own, the first analytical direction from patients data registered in the first coding list focus on: communications, relationships, patient outcomes perception and experience, outcomes of the whole experience, responsivenees, giving interventions, nursing characteristics, physcial environment, safety, patient needs and relatives.

Table 5.10: Interview Details and First Analysis for P2 Interview and Data

Interview details and first analysis
11/11/2009 13:13 The interview was very difficult for the large emotional charge. She explained the feelings she had as a consequence of the incident. She was very repetitive but I think each time she explains again, a most important aspect to assess arises. It was good because it is a very direct experience about an incident; it was bad because sometimes it was difficult for me to help her in not feeling so bad. The patient did an in depth analysis of the importance of relationships and communications. It will be important to analyse, the continuum of care after this night incident and the role that nurse in the morning shift plays. It was difficult trying to know more about the incident because she was very upset.

From a base on this first careful analysis, Table 5.11 presents how conceptual categories (fourth column) were constructed; one example from patients (first row) and one from nurses (second row) data. The first column displays the initial codes, the second

the provisional categories and the third column the final subcategories; the final conceptual categories for the substantial theory were constructed on the basis of these.

Table 5.11: Example of the Construction of Some Conceptual Categories

	Initial codes	Provisional categories	Subcategories	Conceptual categories
Patients' data	Bell Lights Boxes Monitoring devices	Care context	Safety elements Discomfort elements	Perceiving the environment
Nurses' data	Accountability & Advocacy Being sensitive Informing Knowing	Nurses' characteristics and strategies	Knowing and informing patient Being sensitive and being with Keeping under control	Facilitating strategies

Figures 5.4 and 5.5 display the first tentative integrative diagrams whilst the final integrative diagrams from patients' and nurses' data respectively are displayed in Chapters Seven and Eight respectively. In Figure 5.4 it is possible to identify the difficulties in constructing analyses from the patient's point of view.

Caring attributes was the first core category built and after further reviewing data and memos it became clear that it was not a matter of caring attributes but rather that it was about a patient process of adapting to their HDU admission. The effect of identifying caring attributes first shows where the capacity to promote or prevent patient adaptation to HDU admission lies.

Following analysis of the patients' data, getting patients involved and holistic care along with other items were identified as 'supporting elements' for patient adaptation to HDU admission. Both were initially identified as subcategories of the adapting elements. But when the core category was constructed, patient data in relation to getting patients involved and holistic care, this revealed that there was a step between those interventions and being in the best position to adapt which can be both promoted or prevented by the 'supporting elements', as it is exemplified in the follow quotation.

P4: we come devastated, right? Awful... some worse than others... And of course, what we want is to be... helped ... well... a special treatment... not normal treatment.. it must be special... you know... if we come... if you come ill... nurse must know how…

According to the patient what is required is special treatment, when he said nurse must know how, he is referring to nursing interventions to overcome patient need, 'what we want is to be helped'. As reported in the findings Chapter, what makes a difference is the 'supporting elements' during nursing interventions as such getting the patient involved and holistic care.
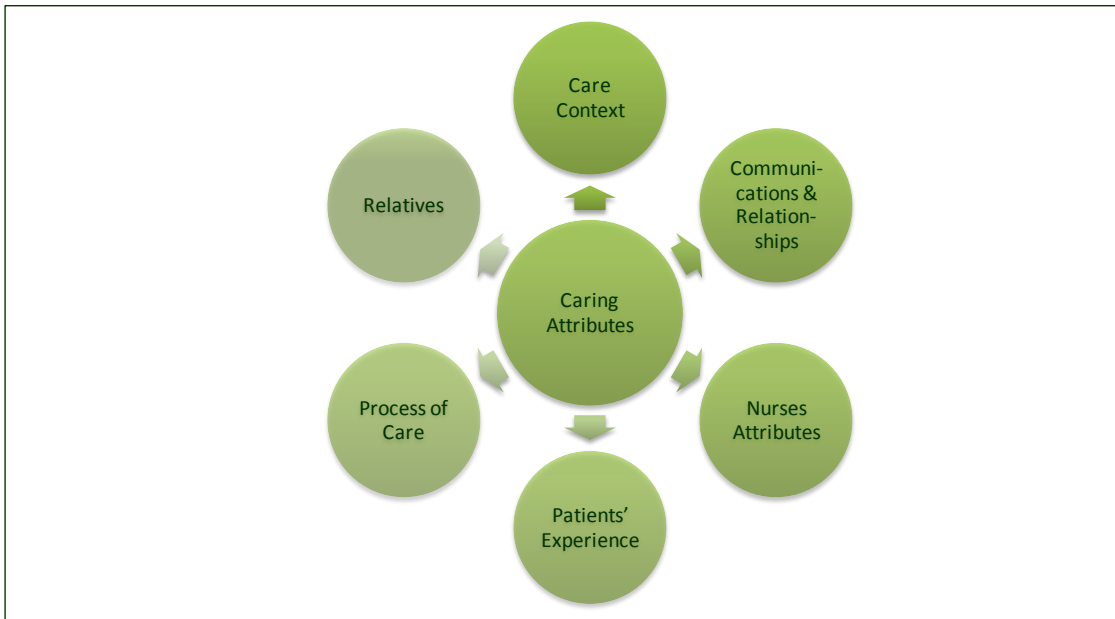
Figure 5.4: First Tentative Integrative Diagram from Patients' Data

Figure 5.5 exhibits the first tentative integrative diagram from the nurses' data. From the three provisional categories four conceptual categories were constructed. They included some of the original codes reviewed and some from other categories after their linkage was established. All these relationship are detailed in the findings Chapter.
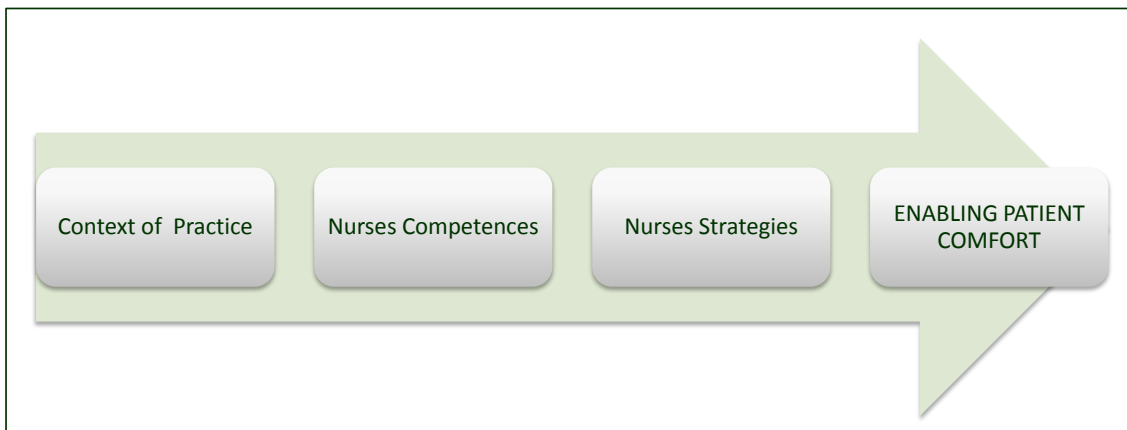
Figure 5.5: First Tentative Integrative Diagram from Nurses' Data

Three conceptual categories were constructed on which the core category 'enabling patient comfort', was based. After this analysis, it was possible to identify and organise data following the elements that influence nursing practice. This organisation allowed a workable outline beginning with 'adapting to the context' of practice within the structure components, followed by process components which included 'nurses competences' as well as 'nurses strategies'. . The analysis of these three categories reveals 'enabling patient

comfort', as a core category in which aspects of nursing care were based within the outcomes component.

The Nvivo software package, QSR Nivo 8 was used to support qualitative data analysis. This software was chosen because it helps to organise the research, aids data retrieval and enables handling data and blending ideas. Besides these features, it offers the ability to save different sources of information in the same file along with various levels of analysis done until the final draft of the findings is reached. Special attention was paid to introducing NVivo software into the research process at the appropriate time. This was after hand-highlighting interesting, recurring or extraordinary themes, while initial hand line-by-line coding was performed for each interview and focus group. The software was introduced following revision of this initial coding. After uploading all data sources (interviews and focus groups transcriptions) I continued with focused coding where codes were identified and classified in NVivo as free nodes. These nodes allow coding in an unorganised way as data was read and analysed; also at that point memo elaboration related to codes began.

In the next step, while continuing to write memos, codes were organised based on dimensions and properties and classified in NVivo as tree nodes (axial coding). This means that during axial coding similar codes are gathered together and turned into categories to provide understanding of the data. By constant comparative method, data were read; analysed, reviewed several times, codes changed and readjusted allowing the evolution from being conceptual initially to being more theoretical in the final stages when no more changes appeared necessary. At this stage of the analysis a new NVivo field was created to begin the theoretical coding. In this analysis the following elements helped to made up the theoretical model. Links and annotations from NVivo were used along with queries and a matrix allowing a more accurate explanation of the phenomenon under study which began to be created during the process of coding categorisation, examining relationships and conditions being confirmed with real cases in the data.

The final step to build the substantive theory involved reviewing and rethinking what it was within each category from both the patients' and nurses' data, identifying the common elements, on which the main categories of the theory were built (Richards, 2009:166-167). These are presented in Chapter Nine section 9.3.3 Substantive Theory of Patient Adaptation through the Promotion of Comfort.

5.7.3.2. From Catalan and Spanish to English

The official languages in Catalonia are Catalan and Spanish. According to the survey of language use in the Catalonia population for 2008[13], Catalan 94.6% of population understands, 78.3% speaks, 81.7% reads, and 61.8% write it. These percentages increase for Spanish: 99.9% of population understands, 99.7% speaks, 97.4% reads, and 95.6% write it. The researcher's mother tongue is Catalan but Spanish, as for the majority of Catalonia people, is as familiar as Catalan.

Interviews and focus groups data were performed in Catalan or in Spanish depending on the participants' choice or language use. The verbatim transcriptions of the interviews and focus groups remained in the participant's original language. Prior to the translation into English, the researcher reviewed the accuracy of the transcription. As was noted earlier, the reason for translating the interviews and focus groups verbatim into English was to share participants' data and the process of analysis with research supervisors, and for the final thesis presentation. An external experienced audio-typist and translator assisted in the transcription and translation process. Once the translations were completed, these were subsequently reviewed by the researcher, and further modifications made for particular extracts with advice from supervisors.

As stated in the literature (Davis & Cannava, 1992) translation involves a choice which implies some degree of subjectivity between being exact and probably changing the possible intended meaning or using words that are not direct translations but are selected to hold the message. From the back-translation method that had been described in the early seventies (Brislin, 1970) which in short involves a translation into the target language and then a back translation into the original followed by a comparison of both documents, the recommended processes for conducting translations have varied little over the years (Lopez et al., 2008; Jones & Boyle, 2011).

To ensure reliability and validity, the translation process in this research involved a competent translator who translated the original versions transcripts followed by a review of the translation performed by myself to assure the accuracy of the original meaning of the passages. In the N-Vivo analysis, the interviews were distributed in two columns, one for the original participant language and the other the English translation. When

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[13] *Enquesta d'usos lingüístics de la població 2008*

http://cercador.gencat.cat/cercador/AppJava/cache.jsp?q=cache:M-3JQZ9bwqsJ:http://www.idescat.cat/cat/idescat/publicacions/cataleg/pdfdocs/eulp2008.pdf%2Bparla%2Bcatal%E0&t=2

inconsistencies were identified, changes were made, and the translated and the original version were revised again by a third person not involved in the translation and review process.

Having the two texts, and using a specialised dictionary[14] in addition to English texts (that defined and used important concepts relating to the process of nursing care) (Benner et al., 1999; Benner, 2001b; Kolcaba, 2003; Cutcliffe & McKenna, 2005a; Mason-Whitehead, 2008), helped in the analysis and findings writing process and assured the meanings that participants assigned to particular situations. To complete the rigour of the translation process, quotes reported in the findings Chapters were revised by an English mother tongue speaker who was also fluent in Catalan and Spanish to demonstrate the adequacy of the final translated versions (Lopez et al., 2008). To avoid overloading the findings Chapters, quotes are presented in English only. Appendix A provides the original text (in either Catalan or Spanish) for each extract.

5.8. Criteria for Evaluation

This section aims to demonstrate the integrity of this research, stating the criteria for evaluating the methodological quality which is crucial when considering the value of the findings. To judge the integrity for Study I, the prospective observational study, methods were applied to control reliability, validity (internal and external) and objectivity. From a constructivist perspective, criteria used to judge the trustworthiness for Study II, the exploratory interview study, were those offered by Lincoln and Guba's framework (Polit & Beck, 2008:538-551) in addition to Miles and Huberman's work (Miles & Huberman, 1994:277-280). Guba and Lincoln in the 80s decade substituted reliability, validity and objectivity of the quantitative research integrity with the parallel concepts for qualitative research of trustworthiness considering dependability (reliability), credibility (internal validity), transferability (external validity) and confirmability (objectivity). Later they added authenticity, the unique criterion to evaluate the quality of the research beyond constructivist methodological dimensions (Miles & Huberman, 1994:277-280; Morse et al., 2002).

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[14] *Diccionari d'Infermeria*
http://www.gencat.cat/salut/servling/servling/html/ca/dir1431/dn1431/diccionariinfermeria.pdf

5.8.1. Criteria for Study I: Prospective Observational Study

The same data were recorded from all participants and all data recorded were included in the analysis as an essential pre-requisite for validity. Two topics are central to internal validity, biases and confounders. In this research, bias from participants was controlled including all patients and nurses during the study period, the researcher stands outside the phenomena under study as detailed in objectivity criteria below. Furthermore an accurate description of the research process is provided in this Chapter. Other sources of bias could be the study design. Descriptive studies allow the recognition of a relationship between two variables; however it is difficult to really demonstrate how this relationship is established and its direction. Such studies are less powerful than experimental studies in determining the cause of an observed outcome (Nelson et al., 2006:239). Confounders, variables which can work with or against independent variables, are a potential problem. Control for potential confounding factors was performed statistically, using logistic regression, to try to eliminate their effect on the relationship between the independent and dependent variables. The study sample is representative of the HDU setting (all patients during a three month study period were included and the nurses caring for them) and outcomes variables are the most frequently reported in the literature were chosen meaning that results can be generalised beyond the sample. Measurements made to enhance objectivity included the use of valid and reliable tool such as the Charlson Comorbidity Index used in this research, and the systematic process of method of data collection was always performed by myself, remaining detached from participants and from the environment.

5.8.2. Criteria for Study II: Exploratory Interview Study

To show that the findings are consistent and could be repeated, inquiry audit has been applied. Supervisors cross-checked the first version of the coding framework for the first three patient interview data analysis; findings were contrasted among us in a working session; furthermore they also examined the whole research process as well as these findings. As they were not involved in the research process this evaluation acts as an external inquiry audit because supervisors assessed the accuracy, evaluating if data supported the findings, interpretations and conclusions of the exploratory interview study.

In order to enhance credibility, an accurate and detailed description of the setting and research participants was provided at the beginning of this Chapter. During interviews and focus groups intensive listening was performed in addition to audio taping, and

precise verbatim transcription and translation. The time spent on the HDU allowed collection of data rich enough to understand the culture and the views of participants, focusing on the characteristics relevant for the study, deepening them through persistent observation and prolonged engagement. Comprehensive field notes were taken as stated in previous sections in addition to negative case analysis. Another methods used in this research to enhance credibility was method triangulation; both studies (I and II) collected data to understand the same phenomenon which was the influence of nursing practice on patients' outcomes and safety in a HDU. Many sources of data (patients, nurses, and researchers' field notes) and methods of data collection (observations, interviews, focus groups) made it possible to cross-check data achieving credibility.

To enable transferability, thick description of the research process and findings were presented in previous sections of this Chapter leading to recognition and identification of the findings; significant issues arose in the analysis which may have applicability in other contexts. Confirmability techniques such as triangulation and audit described above were performed. During the focus groups nurses were informed that once the analysis had been finished, an information session on findings would be held. This session was done only with nurses because it was considered that to carry out one for patients would be an undue emotional burden emanating from thinking again about their experience.

It is recognised that it is not feasible for the researcher to stay completely detached from the data specially if the data and field are familiar along with the participants are well known to them. Although my background is as a nurse, during the research process I tried in my researcher role to remain as much as I could apart from data, participants and study site. Even though I did not experience conflicting feelings, at this point it is also important point out that during patient data analysis I always tried to come from a patient perspective but, probably because of the nurse in me, my observer's value, priorities, positions and actions could affect views and constructions as Charmaz clearly states (Morse et al., 2009:141).

Methods to capture authenticity included prolonged engagement, persistent observation, audio taping and verbatim transcription in addition to thick description (Polit & Beck, 2008:540). In Chapter Seven, findings of patients' data, the inclusion of approximately 100 quotations aims to convey the authenticity of the data and the construction of the findings.

5.9. Chapter Summary

This Chapter described the purpose of this PhD multi-methods research, integrated by two studies (Study I, with a prospective observational design, and Study II, with exploratory interview design) along with the methods used to collect and analyse data. A detailed description of the study design, research context and population was provided in addition to considering ethical issues. In Study I associated hypotheses from the research questions were identified and effectively addressed by the prospective observational design. The study sample included all patients admitted to the HDU who met the inclusion criteria and the nurses who took care of them. Within the data collection, study variables were described and analyses were discussed to explain which statistical methods were used to evaluate accurately findings from the study. Correlational design allows the provision of information on the direction and degree of association between nurses and patients variables. For Study II, sample recruitment was described in addition to how in-depth interviews and focus groups were performed. Data analysis here was guided by Constructivist Grounded Theory and an overview of how this approach was followed through was presented, and how data were organised and constructed, in addition to how NVivo software was used to support the analysis. This Chapter ended by exploring criteria for quality evaluation and described the techniques used to mitigate researcher bias and other threats to the integrity of Study I and II.

Part III

FINDINGS AND MAKING SENSE OF THE DATA

6.1. Introduction

This Chapter presents the findings for Study I. The study's purpose was, within a prospective observational design undertaken in a HDU, to describe nurses' and patients' variables and to determine if any relationship existed between nurses' structure and process variables and patients' outcomes and safety variables while controlling for confounders(Table 6.1). This Chapter is structured in four sections. Section 6.2 presents the findings from the descriptive and bivariate analysis of the patient and nurse data. Section 6.3 presents the inferential statistical analysis with findings structured by the hypotheses derived from the research question. Finally, section 6.4 outlines the main findings from this prospective observational study as a chapter summary. Variables under study are reported below in Table 6.1 differentiated between patients and nurses variables.

Table 6.1: Patients and Nurses Variables Analysed

	Confounding Variables	Dependent Variables	
	Patients' Characteristic	**Patients' Outcomes**	**Patients' Safety Incident**
Patients Variables	・ Age, gender ・ Type of illness ・ ICD-9 ・ Charlson comorbidity index (CCI) ・ Cardiovascular diseases ・ Risk factors ・ Location prior to admission ・ Location at discharge ・ Shift on admission ・ Shift at discharge ・ Patient turnover ・ Closely monitored patient	・ Mortality ・ Failure to Rescue ・ Readmission ・ Length of Stay ・ Pain	・ Nosocomial infections (NI) ・ Type of NI ・ Falls ・ Medication errors ・ Pressure ulcers ・ Surgical bleed ・ Blood transfusion events ・ Drug event ・ Life-threatening situations
	Independent Variables		
	Nurses Structure	**Nurses Process**	**Nurses Outcomes**
Nurses Variables	・ Age, gender ・ Professional category ・ Work situation ・ Shift ・ Educational level ・ Years of experience ・ Professional level ・ Nurse turnover/nurse high turnover ・ Nursing staff profile	・ Quality perception ・ Autonomy perception	・ Needlestick injuries

Throughout this chapter, in both the descriptive and inferential analysis, patients' variables are classified as either dependent or confounding and those from nurses as structure, process and outcomes variables, as perceived within Donabedian's quality framework.

6.2. Descriptive and Bivariate Analysis

6.2.1. Patients

Patients' results are summarised in tables according to their characteristics (Tables 6.2 and 6.3), patients' outcomes variables (Table 6.4) and patients' safety incidents (Table 6.5). In these four tables data come from all 501 patients if not, it is noted otherwise. The first column presents the variable under study and the next three, results for all patients, by male and female. The last columns in tables 6.2, 6.4 and 6.5 show statistical tests results by gender. Statistically significant results (p< 0.05) are indicated by shading.

Of the 501 patients who were included in the study, that is the whole population of the HDU during the study period, 64% were men. The mean age was 66 (17-96) years. Six percent of patients were aged over 85 years, more than a third (35%) over 75 years and, more than three quarters (80%) were aged 50 or more and only 0.4% were below the age of 21 years. Figure 6.1 shows the patients' age distribution by gender.
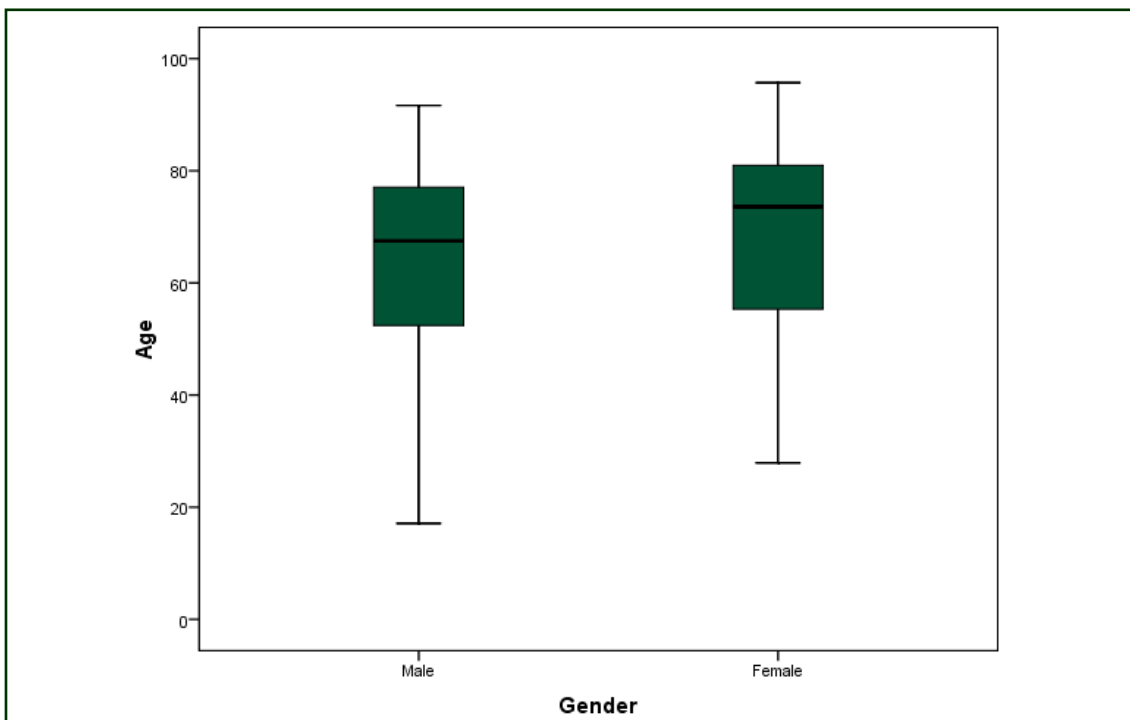
Figure 6.1: Patients' Age Distribution by Gender

The dark horizontal line within the box represents the median which was slightly higher with a less symmetrical distribution in female than male patients. The edges of the box represent, respectively from bottom to top, the 25th and 75th percentiles; the upper fence represents the value equal to 1.5 times the difference between the lower and upper hinges while the lower fence represents the value equal to 1.5 times the difference between the lower and upper hinges.

As shown in Table 6.2, the mean age difference between male and female was statistically significant; males were slightly younger than females. A higher proportion of medical patients (66%) were admitted when compared with surgical ones; nearly 100% of illnesses were acute. The mean Charlson Comorbidity Index was close to 3 and increased to 5 after age adjustment. Half of patients had a previous diagnosis of hypertension and a third were active smokers. Major differences between genders were observed in risk factors; a higher proportion was observed in males. At admission, 68% of patients were from the emergency department. At discharge 52% were transferred from the HDU to a general ward and 4% died in the HDU. The afternoon shift carried out 48% of all admissions and 69% of all HDU discharges.

Table 6.3 describes the main medical diagnosis at discharge classified according to fourteen families of disease in the International Classification of Diseases 9th Edition (ICD-9). The most frequent diseases observed were those of the circulatory system (39%) and the digestive system (25%); these in addition to injury and poisoning (9%) and neoplasm (8%) described 80% of patients' medical diagnoses. No significant statistical differences were found between patients' main medical diagnosis by gender (p= 0.171).

Table 6.4 presents patients' outcomes variables. *Mortality* was recorded at six different times: In-patient hospital, in-patient HDU, at 30 days, at 3 months, at 6 months and at one year. In-patient hospital mortality (n=501) was 9% while in-patient hospital HDU (n=501) was 4%. Mortality at 30 days (n=455, number of patients alive at 1 month) at 3 months (n=450, number of patients alive at 3 months) and at one year (n=435, number of patients alive at one year) after admission was 1%, increasing to 2% when measured at 6 months (n=444, number of patients alive at 6 months). *Failure to Rescue* occurred in 8.6% of patients with significantly lower values in females. The highest rate of *Readmissions*, 5% occurred at 3 months, followed by readmissions within one month (4.6%) and at 6 months (2%). The lowest rate 1.8% occurred within 72 hours of admission. The mean *Length of Stay* in hospital was two weeks which included 4 days in HDU after

experiencing 3 days in another hospital setting. Fifteen percent of patients reported Pain at some point during their stay in the HDU.

Table 6.2: Characteristics of the Patients

Variables	All patients	Male	Female	p
Number of patients	501	321 (64)	180 (36)	
Age	66±16	64±16	68±16.47	.005
	(17-96)	(17-92)	(28-96)	
Type of illness				.632
· **Medical**	**330 (66)**	**209 (65)**	**121 (67)**	
· Surgical	171 (34)	112 (35)	59 (33)	
Charlson Comorbidity Index	2.7 ± 2.8	2.7±2.6	2.6±3	.730
	(0-14)	(0-14)	(0-14)	
Charlson age adjusted	4.9 ± 3.4	4.8 ± 3.3	5.1 ± 3.5	.415
	(0-17)	(0-17)	(0-17)	
Cardiovascular Diseases				
· Arrhythmia	74 (15)	49 (15)	25 (14)	.677
· Aortic Stenosis	3 (1)	1 (1)	2 (1)	.266
· **Hypertension**	**257 (51)**	**161 (50)**	**96 (53)**	.495
Risk factors				
· Dyslipidemia	144 (29)	103 (32)	41 (23)	.027
· **Smoke**	**153 (30)**	**116 (36)**	**37 (21)**	.000
· Alcohol	89 (18)	74 (23)	15 (8)	.000
Admission and discharge patients characteristics				
Location prior admission				.602
· **Emergency**	**342 (68)**	**215 (67)**	**127 (71)**	
· Reanimation	28 (5)	15 (5)	13 (7)	
· Hemodynamic	31 (6)	22 (7)	9 (5)	
· ICU	46 (9)	31 (9)	15 (8)	
· General Ward	33(7)	25 (8)	8 (4)	
· Home / Primary care	2 (1)	1 (0)	1 (1)	
· Other centre	19 (4)	12 (4)	7 (4)	
Location at discharge				.057
· **General Ward**	**264 (52)**	**154 (48)**	**110 (61)**	
· Home	166 (33)	114 (35)	52 (29)	
· ICU	29 (6)	22 (7)	7 (4)	
· Reanimation	9 (2)	8 (2)	1 (0)	
· Other centre	14 (3)	11 (4)	3 (2)	
· Dead patients	19 (4)	12 (4)	7 (4)	
Shift of admission				.119
· Morning shift 7am to 2pm	124 (25)	83 (26)	41 (23)	
· **Afternoon shift 2 to 9pm**	**242 (48)**	**161 (50)**	**81 (45)**	
· Night shift 9 to 12pm	103 (21)	62 (19)	41 (23)	
· Night shift 0 to 7 am	32 (6)	15 (5)	17 (9)	
Shift of discharge				.063
· Morning shift 7am to 2pm	108 (22)	79 (25)	29 (16)	
· **Afternoon shift 2 to 9pm**	**349 (69)**	**211 (66)**	**138 (77)**	
· Night shift 9 to 12pm	28 (6)	21 (6)	7 (4)	
· Night shift 0 to 7 am	16 (3)	10 (3)	6 (3)	

Results are presented as nº (%) and mean± SD, (range). Bold numbers in shaded cells indicate significant statistical tests, χ^2 and t-test, results by gender. Bold numbers report the highest value for the variable

Table 6.3: International Classification of Diseases 9th Edition (ICD-9)

Variables	All patients	Male	Female
ICD-9 at discharge:			
・ Infectious and parasitic diseases	8 (1.6)	5 (1.6)	3 (1.7)
・ Neoplasms	39 (7.8)	21 (6.5)	18 (10)
・ Endocrine, nutritional and metabolic diseases, and immunity disorders	3 (0.6)	1 (0.3)	2 (1.1)
・ D. of the blood and blood forming organs	2 (0.4)	0 (0)	2 (1.1)
・ Mental disorders	3 (0.6)	1 (0.3)	2 (1.1)
・ D. of the nervous system and sense organs	5 (1.0)	4 (1.2)	1 (0.6)
・ **D. of the circulatory system**	**196 (39)**	**129 (40.2)**	**67 (37.2)**
・ D. of the respiratory system	52 (10.4)	32 (10)	20 (11.1)
・ **D. of the digestive system**	**125 (25)**	**88 (27.4)**	**37 (20.6)**
・ D. of the genitourinary system	5 (1.0)	3 (0.9)	2 (1.1)
・ D. of the skin and subcutaneous tissue	1 (0.2)	0 (0)	1 (0.6)
・ Congenital anomalies	2 (0.4)	0 (0)	2 (1.1)
・ Symptoms, signs, and ill defined conditions	15 (3.0)	11 (3.4)	4 (2.2)
・ Injury and poisoning	45 (9.0)	26 (8.1)	19 (10.6)

D (Disease). Results are presented as nº (%). Bold numbers report the highest value for the variable

Table 6.4: Patients' Outcomes

Variables	All patients	Male	Female	p
Number of patients	501	321	180	
Mortality				
・ **In-patient hospital**	**46 (9.2)**	**31 (9.7)**	**15 (8.3)**	.622
・ In-patient HDU	19 (3.8)	12 (3.7)	7 (3.9)	.933
・ 30 days	5 (1.1)	3 (1.0)	2 (1.2)	.960
・ 3 month	6 (1.3)	4 (1.3)	2 (1.3)	.998
・ 6 month	9 (2.1)	3 (1.1)	6 (4.0)	.136
・ 12 month	5 (1.3)	4 (1.6)	1 (0.7)	.593
Failure to rescue	**43 (8.6)**	**29 (9.1)**	**14 (7.9)**	**.039**
Readmissions				
・ Before 72h	9 (1.8)	6 (1.9)	3 (1.7)	.839
・ Within 1month	23 (4.6)	17 (5.3)	6 (3.3)	.585
・ **Within 3month**	**25 (5.0)**	**15 (4.7)**	**10 (5.6)**	.908
・ Within 6month	10 (2.0)	3 (1)	7 (3.9)	.083
Length of:				
・ Hospital stay	15.88± 23.40 (0-210)	15.77±24.18 (0-210)	16.09±22.01 (0-129)	.883
・ HDU stay	3.79± 4.67 (0-38)	3.69±4.30 (0-34)	3.97±5.29 (0-38)	.524
・ Stay before HDU	3.13± 11.65 (0-135)	.51±13.44 (0-135)	2.45±7.44 (0-45)	.330
Pain	78 (15.6)	45 (14)	33 (18)	.212

Results are presented as nº (%) and mean± SD, (range). Bold numbers in shaded cells indicate significant statistical tests, χ^2 and t-test, results by gender. Bold numbers report the highest value for the variable

Table 6.5 presents patients' safety incidents variables. **Nosocomial Infection** is reported based on specimen collection which occurred in 54% of patients; of these 27% were positive, with a significant lower levels in males (p =0.003). Specimen collection was performed up to three times in 88% of patients and 56% in HDU setting.

When *Types of Nosocomial Infection* are analysed a significant lower levels in males were observed in surgical site type (p=0.043). The most frequent type was urinary tract infection (61%) followed by surgical site infection (25%) whilst respiratory tract and intravascular catheter-related infections (15%) had the same incidence.

The incidence of *Falls* and *Pressure Sores* was around 1% and 1.4% for *surgical bleed*. *Medication Errors* were reported in two patients. One adverse drug event was identified and no adverse transfusion events occurred as a consequence of blood transfusions administered to 8% of patients. *Life-threatening Situations* occurred in 2.2% of patients, 8 suffered a cardiac arrest and 5 patients pulmonary failure.

Table 6.5: Patients' Safety Incidents

Variables	All patients	Male	Female	p
Number of patients	501	321	180	
Nosocomial infection				
· Specimen Collection	268 (54)	171 (53)	97 (54)	.894
· Positive Specimen Collection	**71 (27)**	**35 (21)**	**36 (37)**	**.003**
· Number of Positive Specimen Collection				.175
· ≤ 3	63 (88)	30 (83)	33 (92)	
· > 3	9 (13)	6 (17)	3 (8)	
· Period of positive Specimen Collection				.691
· Previous HDU	27 (37)	12 (33)	15 (41)	
· HDU	40 (56)	21 (61)	19 (51)	
· After HDU until 72h after	4 (7)	2 (6)	2 (8)	
Type of nosocomial infection				
· Blood culture	23 (33)	15 (42)	8 (24)	.125
· Surgical site	**17 (25)**	**5 (14)**	**12 (35)**	**.043**
· Intravascular Catheter-related Infections	10 (15)	8 (23)	2 (6)	.051
· Number of catheters ≤ 3	486 (97)	313 (97)	173 (96)	.559
· Number of catheters > 3	15 (3)	8 (3)	7 (4)	.559
· Urinary tract	44 (61)	18 (50)	26 (72)	.053
· Presence of urinary catheter	21 (36)	7 (25)	14 (45)	.106
· Respiratory tract	10 (15)	8 (23)	2 (6)	.051
· Mechanical ventilation	10 (15)	8 (23)	2 (6)	.051
Falls	5 (1.0)	4 (1.2)	1 (0.6)	.744
Medication errors (Dispensing)	2 (0.6)	2 (0.4)	0 (0)	.289
Adverse drug events	1 (0.2)	-	1 (0.6)	.181
Pressure sore in HDU	5 (1.0)	3 (0.9)	2 (1.1)	.854
Pressure sore at hospital discharge (ICD-9)	4 (1.8)	3 (0.9)	1 (1.6)	.643
Surgical bleed	7 (1.4)	3 (0.9)	4 (2.2)	.396
Blood transfusion	39 (8)	24 (7)	14 (8)	.731
· Adverse transfusion event	-	-	-	-
Life-threatening situation				
· Cardiac arrest	8 (1.6)	5 (1.6)	3 (1.7)	.926
· Pulmonary failure	5 (0.6)	4 (1.2)	1 (1.0)	.456

Results are presented as nº (%). Bold numbers in shaded cells indicate significant statistical tests results by gender

Bivariate analysis was performed between patients who had required close surveillance (surveillance every 15 minutes for at least six hours at any time during the patient's admission to HDU), and those who did not. Close surveillance was performed when the patient was hemodynamically unstable and was at risk of suffering some complication. Figure 6.2 shows patients' outcomes and safety variables expressed as a percentage according to whether the patient required closely monitoring (n=151; 30%), or not. Statistically significant difference were evident between these two groups; for the closely monitored patients, all variables values increased, in-hospital mortality by 8% (p=0.004), HDU mortality by 6% (p=0.001) and failure to rescue by 26.5% (p=0.002). When considering patients safety incidents the same trend was observed. *Surgical Nosocomial Infection* increased by 24.3% (p=0.023) while medication errors were only recorded in close surveillance patients 1.3% (p=0.032).
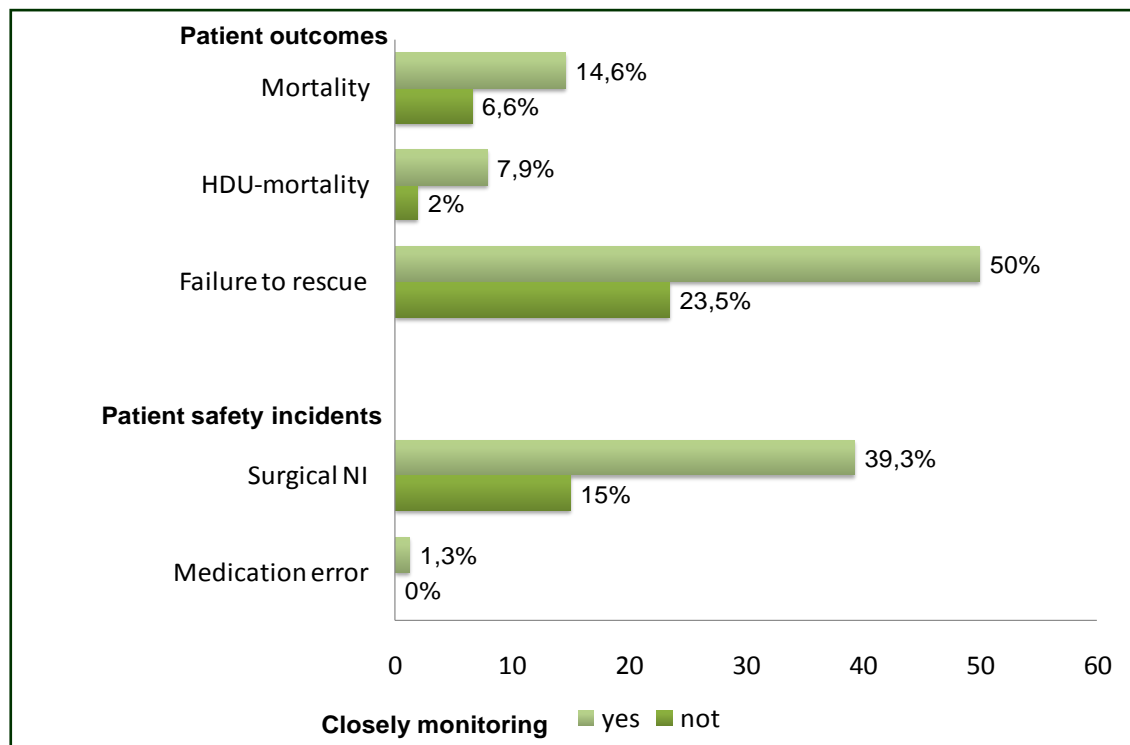
Figure 6.2: Patients' Outcomes and Safety Variables by Closely Monitoring

6.2.2. Nurses

In this section nurses findings are summarised according to nurses' structure (Table 6.6 and Figure 6.3), process (Table 6.7) and outcomes variables (Figure 6.4). In the three tables data comes from all 66 nurses if not, it is noted otherwise. The first column presents the variable under study and the next five columns detail results for all nurses followed by results by shift. The last column displays the statistical tests, χ^2 and t-test, results by shift. Statistically significant results (p< 0.05) are indicated by shading.

Of the 66 nurses who were included in the study, which was the whole population of the HDU during the study period, 6% were men. The mean age was 38 years; the highest value was obtained in night shift-2 while in the afternoon shift was the lowest value. Figure 6.3 show nurses age's distribution by shift. The dark horizontal line within the box represents the median which in night shift-2 was slightly higher than the other shifts. The most symmetric distribution is observed in night shift-1. The horizontal line in the box represents the median; the edges of the box represent, respectively from bottom to top, the 25th and 75th percentiles; the upper fence represents the value equal to 1.5 times the difference between the lower and upper hinges while the lower fence represents the value equal to 1.5 times the difference between the lower and upper hinges.
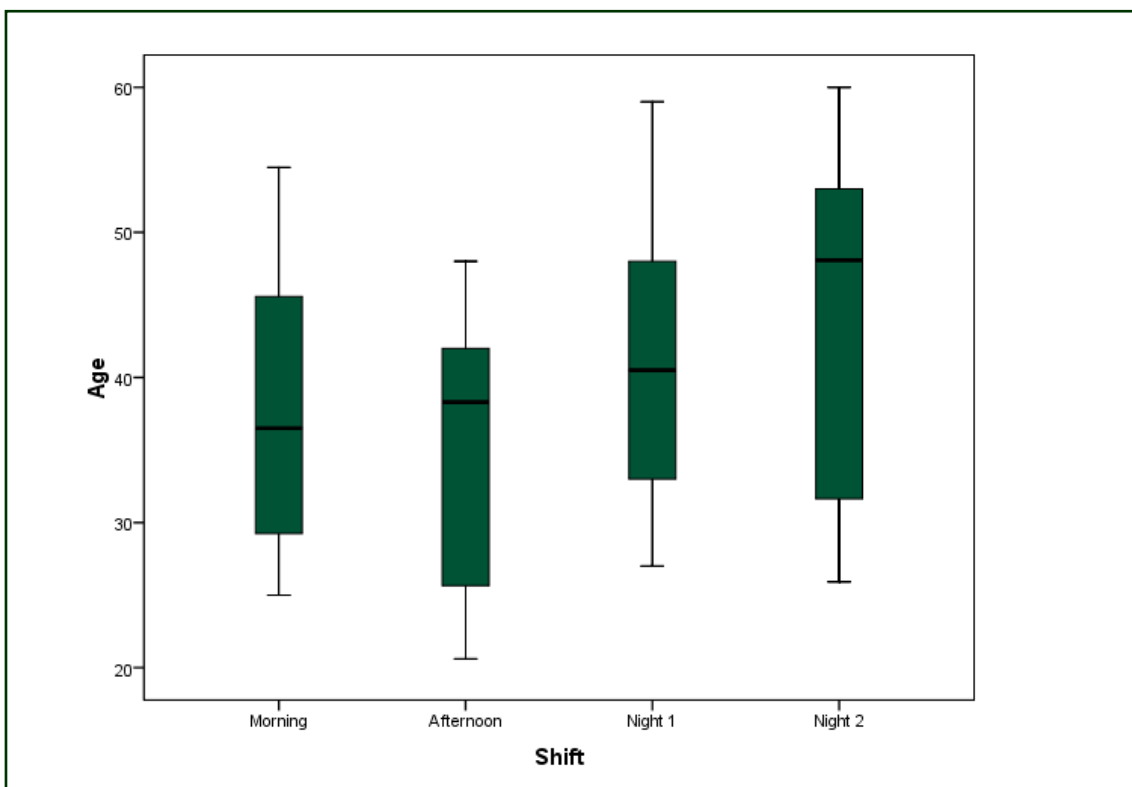
Figure 6.3: Nurses' Age Distribution by Shift

In Table 6.6, which presents data on nurses' structure variables under study, the mean (± the standard deviation) nurses' age was 38±11. When comparing by shift the youngest nurses were on the afternoon shift 35±9 years, followed by 37±10 years for those on the morning shift. Age distribution on the night shifts was 41±11 years for night shift-1, whilst on night shift-2 it was 44±12 years. Only 4% of nurses were men with a higher proportion of registered nurses on each shift.

Nurses were in permanent employment in 62% shifts ranging between the extremes of 50% permanent in the morning shift up to 100% on the night shift-1. Among registered

nurses and related to educational level, more than a half had higher degrees mostly related to critical care nursing. A higher proportion of nurses with higher degrees (78%) were found on the morning shift whilst on night shift-1 the lowest rate was observed (29%). The mean length of hospital experience was 14 years and 6 years for HDU experience; nurses with more years of experience were identified on night shifts. The last variable within the structure nurses' variables was professional level. Because all the nurses in the study did not meet the first inclusion criteria in relation to the achievement of the low professional level (working in hospital for more than 5 years) data shown is from 25 nurses. The second professional level was the most common; this remained true for night shifts while on the morning shift the most common was the third while on the afternoon shift the second and the third levels had the same percentage.

Table 6.6: Nurses' Structure Variables

Variables	Nurses	Morning	Afternoon	Night-1	Night-2	p
Number of nurses	*66*	*18*	*22*	*11*	*15*	
Age	38±11	37±10	35±9	41±11	44±12	.066
	(21-60)	(25-54)	(21-48)	(27-59)	(26-60)	
Gender (male)	4 (6.1)	1 (5.6)	2 (9.1)	0 (0)	1 (6.7)	.781
Professional category						.754
· Registered nurse	48 (73)	14 (78)	17 (77)	7 (64)	10 (67)	
· Auxiliary nurse	18 (23)	4 (22)	5 (23)	4 (36)	5 (33)	
Work situation						**.038**
· Permanent	**41 (62)**	**9 (50)**	**13 (59)**	**11 (100)**	**8 (53)**	
· Temporal	**25 (38)**	**9 (50)**	**9 (41)**	**0 (0)**	**7 (43)**	
Educational level						
· Higher degree (yes)	35 (60)	**14 (78)**	11 (55)	2 (29)	8 (57)	.141
· CCN* (yes)	32 (54)	**13 (72)**	10 (50)	2 (29)	7 (50)	.451
Hospital experience, years	14±10	12±10	12±9	**18±10**	17±12	.321
HDU experience, years	6±4	6±4	6±5	**10±1**	6±4	.261
Number of nurses	*25*	*8*	*10*	*4*	*3*	
Professional level						.457
· 1	4 (16)	2 (25)	2 (20)	0 (0)	0 (0)	
· 2	**12 (48)**	2 (25)	4 (40)	**4 (100)**	**2 (67)**	
· 3	8 (32)	**3 (38)**	4 (40)	0 (0)	1 (37)	
· 4	1 (4)	1 (12)	0 (0)	0 (0)	0 (0)	

Results are presented as nº (%) and Mean± SD, (range). Bold numbers in shaded cells indicate significant statistical tests results by shift. Bold numbers highlight the more frequent result. *CCN (Critical Care Nursing high degree)

Nurses' process variables are summarised in Table 6.7. Nurses' perception about care quality and autonomy was recorded as continuous variable and rated from 0 to 10. The highest value for perception of care quality was from nurses in the night shift-2 while the higher level of autonomy was from nurses in the afternoon shift.

Table 6.7: Nurses' Process Variables

Variables	Nurses	Morning	Afternoon	Night-1	Night-2	p
Number of nurses	66	18	22	11	15	
Perception of care quality	7.59	7.62	7.76	6.25	**7.80**	.109
Perception of autonomy	6.59	6.15	**7.12**	6.5	6.3	.389

Results are presented as nº (%). Bold numbers highlight the higher values obtained

To explore the differences in the quality of care and autonomy perceived by nurses, correlations were computed between these two variables and age and years of experience in the hospital and in the HDU. The quality of care perception was inversely correlated with age (r= -0.35; p= 0.02), years of experience in hospital (r= -0.33; p= 0.03) and in HDU (r= -0.34; p= 0.01). No statistical significant correlations were found between perceptions of autonomy and nurses' characteristics.

As shown in Figure 6.4, sixteen needle stick injuries occurred during study period half of them in the afternoon shift. Figure 6.5 shows the context of the injury, the use of gloves during injury in addition to the handwashing procedure before and after injury. No injuries occurred in night shift-1.
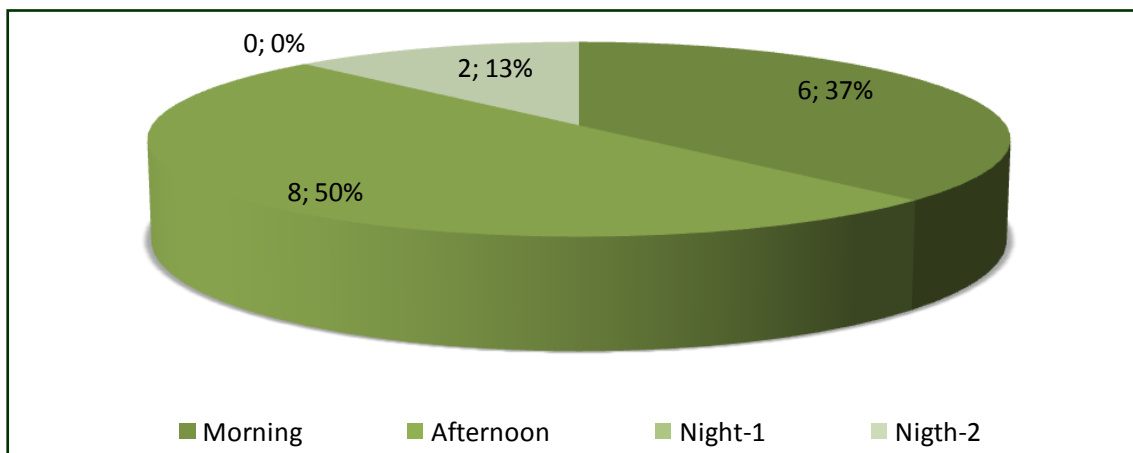
Figure 6.4: Needled Stick Injuries Distribution by Shift

Key findings for the bivariate analysis can be summarised as follow for patients and nurses:

Patients:

– 68% of patients were located in the emergency department before HDU admission

– 66% had a medical illness (from circulatory and digestive systems)

– In-hospital mortality was 4% while failure to rescue occurs in 8.6% of patients

– Close surveillance was performed in 30% of patients; in these patients, HDU mortality rose by 6% and failure to rescue by 26.5%

– Surgical nosocomial infection increased by 24.3% while medication errors where only recorded in close surveillance patients (1.3%).

Nurses:

– 94% of nurses were females with a mean age of 38 years

– 62% were employed permanently

– 60% reported having a higher degree (54% were in critical care patient area)

– Mean length of hospital experience was 14 years and 6 years within the HDU

– Nurses' perception of care quality was on average 7.6 and for their perception of autonomy, 6.6 on average.
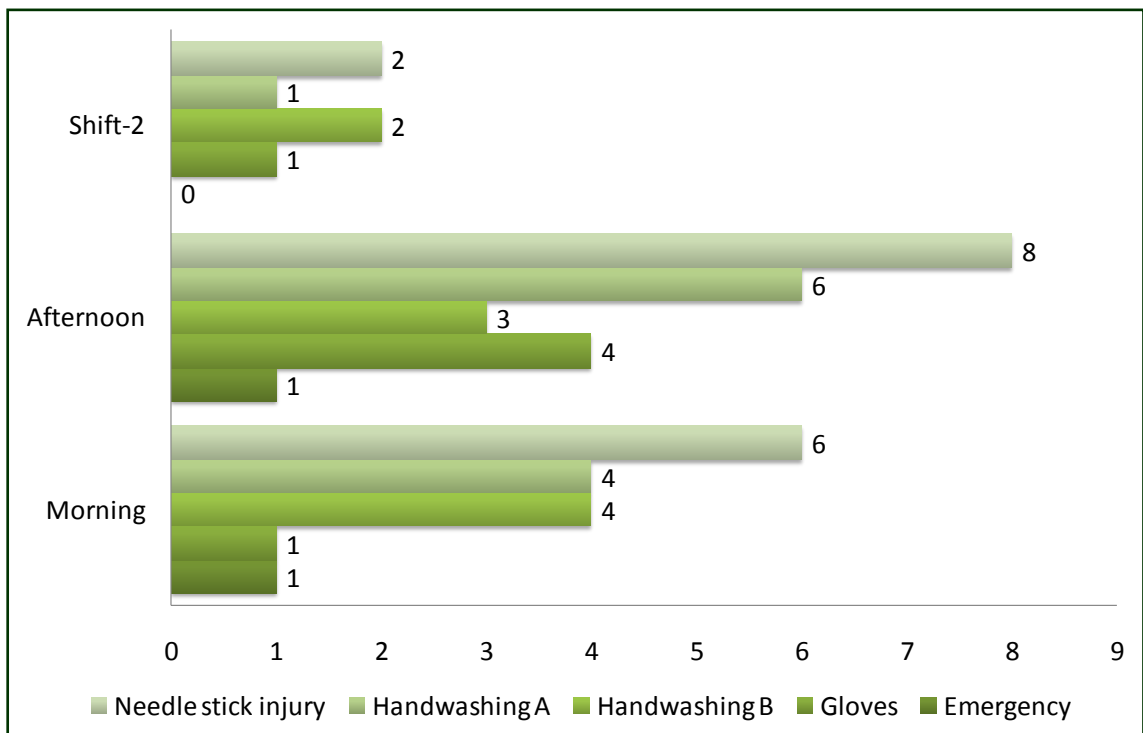
Figure 6.5: Needled Stick Injuries Condition and Safety Procedures by Shift

6.3. Inferential Statistical Analysis

This section presents the results of tests of four study hypotheses derived from the research question: What are the structure and process variables related to nurses' that influence patients outcomes and safety in a HDU?. The study hypotheses were as follows:

Nurses' structure variables influence patients' outcomes in a HDU
Nurses' structure variables influence patients' safety in a HDU
Nurses' process variables influence patients' outcomes in a HDU
Nurses' process variables influence patients' safety in a HDU

Figure 6.6 presents the relationships between groups tested and the variables within each group.

Nurses' structure
- Age
- Experience
- HDU experience
- Work category (Registered Nurses)
- Work situation
- Education (Higher degree)
- HDU education
- Turnover

Patients' outcomes
- Mortality
- Failure to Rescue
- Readmission
- Pain

Nurses' process
- Quality perception of care process
- Autonomy perception of care process

Patients' safety incident
- Nosocomial infections
- Falls
- Medication errors
- Pressure sores
- Surgical bleeding
- Blood transfusion events
- Drug event
- Life-threatening situations

Figure 6.6: Relationships Tested Between Variables Groups

In order to obtain the nursing staff profile for each patient (nurses' structure variables), the hospital timesheet was consulted. For every patient, it was analysed which nurses were working between the day and shift of the patient's admission and the day and shift of the patient's discharge from HDU. Based on that approach the following measurements in relation to nurses were calculated: number of different nurses that worked during patient admission, the mean age, the mean of hospital years of experience and HDU years of experience, percentage of registered nurses, percentage of permanent nurses, percentage of nurses with higher degrees, with specific HDU higher degrees and nurses' turnover. Nurses' turnover was calculated for each patient as the number of

different nurses that worked during patient admission dividing by patient length of HDU stay. This variable was labeled as nurses' turnover because the greater the number of nurses looking after the patient the more continuity of care could be compromised.

6.3.1. Nurses' Structure Variables and Patients' Outcomes

In this section the analysis of nurses' structure variables is presented (see Tables 6.8 and 6.9). This analysis reports the effect of nurses' structure variables on patient outcomes. Nurses' structure variables considered were: age, hospital experience, HDU experience, work category (registered nurses), work situation (permanent), education (higher degree), HDU education (higher degree in CCN[15]) and nurse turnover. Patients' outcomes under study were: mortality, failure to rescue, readmission and pain.

Table 6.8 presents the odds ratio (OR) and associated 95% confidence interval (CI) derived from a logistic regression model. In the adjusted cases, the estimations were adjusted for patients' age, gender, type of illness, cardiac risk, risk factors, location prior to admission and at discharge and significant interactions between them. The odds ratio indicates the change in the risk of the different outcomes associated with a 1-year increase in the average staff nurse age (nurse age), 1-year increase in the average staff nurse hospital experience (nurse experience), 1-year increase in the average staff nurse HDU experience (nurse HDU experience), 1% increase in the proportion of registered nurses (nurse work category) , 1% increase in the proportion of permanent nurses (nurse work situation), 1% increase in the proportion of nurses with higher degrees (nurse education), 1% increase in the proportion of nurses with HDU specific higher degrees (nurse HDU education) and 1-different nurse per patient increase in the nurse turnover.

In Table 6.8 variables with a statistically significant adjusted OR are highlighted. The adjusted ORs have been calculated controlling by patient characteristics variables: age, gender, type of illness (medical or surgical), ICD-9, Charlson Comorbidity Index, cardiovascular diseases (arrhythmia, aortic stenosis, hypertension), risk factors (dyslipidemia, smoke, alcohol) and close surveillance (surveillance every 15 minutes for more than 6 hours at any time during patient HDU admission).

There is a statistically significant effect between nurses' structure variables and mortality, failure to rescue, readmission and pain. Risk of death and failure to rescue, decreased with increasing nurses' age, experience, work category or education. For

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[15] CCN: Critical Care Nursing high degree

instance, when analysed the effect of nurses experience on patients outcomes, the risk of death reduces, OR = 0.68 (0.64-0.71; p< 0.001) and the risk of failure to rescue decreases, OR = 0.87 (0.76-0.96; p< 0.001). In short a 32% decrease in mortality and a 13% decrease in failure to rescue could be expected from increasing nurse experience by one year.

Table 6.8: Nurses' Structure Variables and Patients' Outcomes

Outcome and effect	Unadjusted OR (95% CI)	p value	Adjusted OR (95% CI)	p value
MORTALITY				
Nurse age	0.94 (0.94 - 0.95)	<0.001	0.88 (0.85 - 0.93)	< 0.001
Nurse experience	0.84 (0.82 - 0.86)	< 0.001	0.81 (0.77 - 0.86)	< 0.001
Nurse HDU experience	0.68 (0.64 - 0.71)	< 0.001	0.47 (0.36 - 0.62)	< 0.001
Nurse professional category	0.05 (0.04 - 0.08)	< 0.001	0.003 (0.00 - 0.03)	< 0.001
Nurse work situation	0.04 (0.02 - 0.06)	< 0.001	0.005 (0.00 - 0.04)	< 0.001
Nurse educational level	0.02 (0.01 - 0.03)	< 0.001	0.010 (0.00 - 0.04)	< 0.001
Critical Care high degree	0.01 (0.01 - 0.02)	< 0.001	0.006 (0.00 - 0.02)	< 0.001
High nurse turnover	0.10 (0.07 - 0.14)	< 0.001	0.34 (0.18 - 0.65)	0.001
FAILURE TO RESCUE				
Nurse age	0.98 (0.97 - 0.99)	<0.001	0.93 (0.88 - 0.98)	0.010
Nurse experience	0.94 (0.92 - 0.97)	< 0.001	0.87 (0.76 - 0.99)	0.042
Nurse HDU experience	0.87 (0.76 - 0.96)	< 0.001	0.61 (0.43 - 0.88)	0.008
Nurse professional category	0.37 (0.23 - 0.58)	< 0.001	0.02 (0.00 - 0.44)	0.012
Nurse work situation	0.32 (0.19 - 0.54)	< 0.001	0.03 (0.00 - 0.44)	0.010
Nurse educational level	0.26 (0.14 - 0.48)	< 0.001	0.02 (0.00 - 0.58)	0.023
Critical Care high degree	0.22 (0.11 - 0.44)	< 0.001	0.01 (0.00 - 0.33)	0.011
High nurse turnover	0.43 (0.29 - 0.63)	< 0.001	n/a	n/a
READMISSION				
Nurse age	0.96 (0.95 - 0.96)	<0.001	0.95 (0.94 - 0.96)	< 0.001
Nurse experience	0.88 (0.86 - 0.89)	< 0.001	0.86 (0.83 - 0.88)	< 0.001
Nurse HDU experience	0.75 (0.72 - 0.78)	< 0.001	0.89 (0.72 - 1.11)	ns
Nurse professional category	0.11 (0.08 - 0.15)	< 0.001	0.08 (0.05 - 0.12)	< 0.001
Nurse work situation	0.09 (0.07 - 0.13)	< 0.001	1.30 (0.31 - 5.51)	ns
Nurse educational level	0.05 (0.03 - 0.07)	< 0.001	0.03 (0.01 - 0.05)	< 0.001
Critical Care high degree	0.03 (0.02 - 0.06)	< 0.001	0.019 (0.00 - 0.04)	< 0.001
High nurse turnover	0.18 (0.13 - 0.22)	< 0.001	n/a	n/a
PAIN				
Nurse age	0.96 (0.95 - 0.97)	<0.001	1.01 (0.99 - 1.04)	ns
Nurse experience	0.89 (0.87 - 0.90)	< 0.001	1.04 (0.97 - 1.11)	ns
Nurse HDU experience	0.76 (0.73 - 0.79)	< 0.001	0.88 (0.82 - 0.95)	< 0.001
Nurse professional category	0.12 (0.09 - 0.16)	< 0.001	0.38 (0.22 - 0.69)	< 0.001
Nurse work situation	0.10 (0.07 - 0.14)	< 0.001	1.34 (0.36 - 5.10)	ns
Nurse educational level	0.06 (0.04 - 0.09)	< 0.001	1.64 (0.31 - 8.68)	ns
Critical Care high degree	0.04 (0.03 - 0.07)	< 0.001	1.74 (0.28 - 10.96)	ns
High nurse turnover	0.20 (0.16 - 0.26)	< 0.001	n/a	n/a

Bold variables highlight the ones with a statistically significant adjusted models by confounding patients' variables OR; 'n/a' indicates that it is not possible to build statistically significant adjusted model; 'ns' not statistical significance

The effects are mostly consistent and demonstrating statistical significance except for nurse turnover. It has a significant relationship with mortality, but not with failure to rescue or readmission. Neither are nurse HDU experience nor nurse work situation significantly related to readmission. For pain the pattern is different again; only two variables, nurse HDU experience and nurse professional category, demonstrate significance.

For mortality and failure to rescue, two of the more reported outcome variables in the published literature, logistic regression (LR) equations are presented in Table 6.9. When hospital mortality was analysed, logistic regression has a R^2 of 76% and was globally significant. Risk of death decreased by 11% when nurse age increased by one year. Furthermore, it was reduced by up to 50% when the patient did not need close surveillance for 6 hours continuously. Risk of death increased 3% when patient age increased by one year. This rose to 16% when the Charlson Comorbidity Index (CCI), increased by one point.

Table 6.9: LR Equations for Mortality and Failure to Rescue

MORTALITY: χ^2 = 415.895 p<0.001, R^2=0.755					
	Coefficient	Standard Error	Wald p-value	OR	OR 95% CI
Nurse age	-0.119	0.023	<0.001	0.888	0.848 - 0.929
Patient age	0.034	0.012	0.005	1.035	1.010 – 1.060
CCI (age not adjusted)	0.152	0.051	0.003	1.164	1.054 - 1.287
Closely monitored patient	-0.703	0.327	0.032	0.495	0.261 - 0.940
FAILURE TO RESCUE: χ^2 = 53.442, p<0.001, R^2=0.428					
	Coefficient	Standard Error	Wald p-value	OR	OR 95% CI
Nurse HDU experience	-0.492	0.186	0.008	0.611	0.425 - 0.880
Patient age	0.054	0.014	<0.001	1.055	1.027 - 1.085
Type of illness	-1.107	0.499	0.027	0.330	0.124 - 0.880
Closely monitored patient	-0.997	0.442	0.024	0.359	0.155 - 0.877

For failure to rescue logistic regression reported a R^2 of 43% and was globally significant. Risk of failure to rescue decreased by 39% when nurse HDU experience increased by one year; up to 64% when patient did not need close surveillance for 6 hours continuously and to 33% in medical patients. Risk of failure to rescue increased by 5% when patient age increased by one year.

6.3.2. Nurses' Structure Variables and Patients' Safety Incidents

In this section the effect of nurses' structure variables on patient safety is analysed (Table 6.10).

Table 6.10: Nurses' Structure Variables and Patients' Safety Incidents

Outcome and effect	Unadjusted OR (95% CI)	p value	Adjusted OR (95% CI)	p value
NOSOCOMIAL INFECCION				
Nurse age	1.06 (1.04 - 1.08)	<0.001	n/a	n/a
Nurse experience	1.19 (1.12 - 1.27)	< 0.001	n/a	n/a
Nurse HDU experience	1.49 (1.30 - 1.71)	< 0.001	n/a	n/a
Nurse professional category	20.38 (7.12 - 58.30)	< 0.001	n/a	n/a
Nurse work situation	26.56 (8.39 - 84.14)	< 0.001	n/a	n/a
Nurse educational level	64.71(14.81 - 82.74)	< 0.001	n/a	n/a
Critical Care high degree	94.32 (18.98 - 68.74)	< 0.001	n/a	n/a
High nurse turnover	11.80 (4.74 - 29.40)	< 0.001	n/a	n/a
FALLS				
Nurse age	1.12 (1.10 - 1.15)	<0.001	n/a	n/a
Nurse experience	1.41 (1.32 - 1.51)	< 0.001	n/a	n/a
Nurse HDU experience	2.15 (1.86 - 2.50)	< 0.001	n/a	n/a
Nurse professional category	326.83 (107.11 - 997.28)	< 0.001	n/a	n/a
Nurse work situation	664.93 (189.25 - 2336.25)	< 0.001	n/a	n/a
Nurse educational level	3332.43 (678.97 - 16355.86)	< 0.001	n/a	n/a
Critical Care high degree	7185.96 (1262.91 - 40888.17)	< 0.001	n/a	n/a
High nurse turnover	82.80 (34.28 - 199.98)	< 0.001	n/a	n/a
MEDICATION ERRORS				
Nurse age	0.87 (0.84 - 0.90)	<0.001	n/a	n/a
Nurse experience	0.66 (0.59 - 0.73)	< 0.001	n/a	n/a
Nurse HDU experience	0.40 (0.31 - 0.50)	< 0.001	n/a	n/a
Nurse professional category	0.001 (0.000 - 0.006)	< 0.001	n/a	n/a
Nurse work situation	0.000 (0.000 - 0.003)	< 0.001	n/a	n/a
Nurse educational level	0.000 (0.000 - 0.001)	< 0.001	n/a	n/a
Critical Care high degree	0.000 (0.000 - 0.000)	< 0.001	n/a	n/a
High nurse turnover	0.005 (0.001 - 0.020)	< 0.001	n/a	n/a
PRESSURE ULCERS				
Nurse age	0.90 (0.88 - 0.92)	<0.001	0.95 (0.90-0.99)	0.038
Nurse experience	0.74 (0.70 - 0.78)	< 0.001	1.02 (0.86-1.21)	ns
Nurse HDU experience	0.51 (0.45 - 0.57)	< 0.001	0.98 (0.66-1.47)	ns
Nurse professional category	0.006 (0.002 - 0.014)	< 0.001	n/a	n/a
Nurse work situation	0.003 (0.001 - 0.008)	< 0.001	0.06 (0.00-0.76)	0.030
Nurse educational level	0.001 (0.000 - 0.003)	< 0.001	2.21 (0.03-156.97)	ns
Critical Care high degree	0.000 (0.000 - 0.002)	< 0.001	2.31 (0.02-227.57)	ns
High nurse turnover	0.02 (0.01-0.04)	< 0.001	n/a	n/a
SURGICAL BLEEDING				
Nurse age	0.93 (0.91 - 0.94)	<0.001	0.89 (0.85-0.93)	< 0.001
Nurse experience	0.79 (0.75 - 0.84)	< 0.001	0.71 (0.62-0.81)	< 0.001
Nurse HDU experience	0.60 (0.52 - 0.67)	< 0.001	0.45 (0.33-0.60)	< 0.001
Nurse professional category	0.02 (0.00 - 0.05)	< 0.001	0.003 (0.00-0.03)	< 0.001
Nurse work situation	0.01 (0.00 - 0.03)	< 0.001	0.001 (0.0-0.01)	< 0.001
Nurse educational level	0.005 (0.001 - 0.018)	< 0.001	0.71 (0.62-0.81)	< 0.001
Critical Care high degree	0.003 (0.001 - 0.012)	< 0.001	0.45 (0.33-0.60)	< 0.001
High nurse turnover	0.05 (0.02 - 0.11)	< 0.001	n/a	n/a
LIFE-THREATENING SITUATIONS				
Nurse age	0.91 (0.90 - 0.92)	<0.001	0.85 (0.77-0.94)	0.001
Nurse experience	0.76 (0.72 - 0.79)	< 0.001	0.82 (0.74-0.86)	< 0.001
Nurse HDU experience	0.53 (0.48 - 0.59)	< 0.001	0.33 (0.17-0.63)	0.001
Nurse professional category	0.009 (0.004 - 0.0018)	< 0.001	0.00 (0.00-0.03)	< 0.001
Nurse work situation	0.005 (0.002 - 0.011)	< 0.001	0.02 (0.00-0.05)	< 0.001
Nurse educational level	0.002 (0.001 - 0.004)	< 0.001	0.01 (0.00-0.03)	< 0.001
Critical Care high degree	0.001 (0.000 - 0.003)	< 0.001	0.00 (0.00-0.02)	< 0.001
High nurse turnover	0.02 (0.01-0.04)	< 0.001	0.24 (0.07-0.80)	0.021

Bold variables highlight the ones with a statistically significant adjusted models by confounding patients' variables OR; 'n/a' indicates that it is not possible to build statistically significant adjusted model; 'ns' not statistical significance

These variables were: age, hospital experience, HDU experience, work category (registered nurses), work situation (permanent), education (higher degree), HDU education (higher degree in CCN) and nurse turnover on patients' safety incidents (nosocomial infections and type, falls, medication errors, pressure ulcers, surgical bleed, blood transfusion events, drug event and life-threatening situations).

For patient safety incidents such as nosocomial infection, falls and medication errors, effects disappear when the ORs were adjusted. When pressure ulcers were analysed using the adjusted OR, only the effect of nurse age and nurse work situation was reasonably consistent. In contrast the majority of nurses' structural variables influenced surgical bleeding and life-threatening situations; Table 6.11 presents the logistic regression (LR) equations for both variables.

If HDU nurse experience increased by one year, surgical bleeding risk decreased by 55% and threatening situations risk by 67%. On the other hand, when Charlson Comorbidity Index (CCI) increased by one point, risk of surgical bleeding increased by 26%. Risk of life-threatening situations increased by 5% when patient age increase by one year, furthermore it was reduced up to 95% when patient did not need close surveillance

Table 6.11: LR Equations for Surgical Bleeding and Life-threatening Situations

SURGICAL BLEEDING : χ^2 = 183.605, p<0.001, R^2=0.881					
	Coefficient	Standard Error	Wald p-value	OR	OR 95% CI
Nurse HDU experience	-0.802	0.152	<0.001	0.449	0.333 - 0.604
CCI (age not adjusted)	0.233	0.094	0.013	1.262	1.050 - 1.518
LIFE-THREATENING SITUATIONS : χ^2 = 602.877, p<0.001, R^2=0.936					
	Coefficient	Standard Error	Wald p-value	OR	OR 95% CI
Nurse HDU experience	-1.111	0.334	0.001	0.329	0.171 - 0.634
Patient age	0.052	0.025	0.039	1.054	1.003 - 1.108
Closely monitored patient	-2.309	0.792	0.004	0.099	0.021 - 0.470

6.3.3. Nurses' Process Variables and Patients' Outcomes

In this section the effect of nurses' process variables, quality perception and autonomy perception of care on patients' outcomes (mortality, failure to rescue, readmission and pain) is presented (Table 6.12). A statistically significant effect is evident between all nurses' process variables and mortality, failure to rescue, readmission and pain. When quality of care perception and autonomy perception increased by one point each, risk of death decreased by 30% and 37%, failure to rescue risk by 19% and 23% and

risk of pain followed the same trend being reduced by 21% and 23% respectively. Readmission risk was reduced by 34% when both variables increased by one point.

Table 6.12: Nurses' Process Variables and Patients' Outcomes

Outcome and effect	Unadjusted OR (95% CI)	p value	Adjusted OR (95% CI)	p value
MORTALITY				
Quality of care	0.68 (0.65-0.72)	<0.001	0.70 (0.63-0.77)	<0.001
Autonomy	0.64 (0.60-0.68)	<0.001	0.64 (0.57-0.73)	<0.001
High patient turnover	0.10 (0.07-0.14)	<0.001	n/a	n/a
FAILURE TO RESCUE				
Quality of care	0.68 (0.88-0.72)	<0.001	1.19 (1.02-1.39)	0.028
Autonomy	0.86 (0.80-0.92)	<0.001	1.23 (1.02-1.48)	0.029
High patient turnover	0.43 (0.29-0.63)	<0.001	n/a	n/a
READMISSION				
Quality of care	0.73 (0.70-0.77)	<0.001	0.66 (0.65-0.75)	<0.001
Autonomy	0.70 (0.67-0.74)	<0.001	0.66 (0.61-0.72)	<0.001
High patient turnover	0.17 (0.13-0.22)	<0.001	n/a	n/a
PAIN				
Quality of care	0.76 (0.72-0.79)	<0.001	0.89 (0.83-0.96)	0.002
Autonomy	0.72 (0.69-0.76)	<0.001	0.87 (0.80-0.95)	0.001
High patient turnover	0.20 (0.16-0.26)	<0.001	n/a	n/a

Bold variables highlight the ones with a statistically significant adjusted models by confounding patients' variables OR; 'n/a' indicates that it is not possible to build statistically significant adjusted model;

Logistic regression equations for perception of quality and patients' outcomes are presented in Table 6.13. When hospital mortality was analysed, logistic regression has a R^2 of 73% and was globally significant. Risk of death decreased by 31% when perception of quality increased one point; it was reduced up to 61% when the patient did not need close surveillance for 6 hours continuously.

Risk of death increased 14% when Charlson Comorbidity Index (CCI) increased by one point. Logistic regression equations for perception of autonomy and patients' outcomes are presented in Table 6.14. When hospital mortality was analysed, logistic regression has a R^2 of 73% and was globally significant. Risk of death decreased by 35% when perception of autonomy increased one point; it was reduced up to 59% when the patient did not need close surveillance for 6 hours continuously. . Risk of death increased 15% when Charlson Comorbidity Index (CCI) increased by one point.

Table 6.13: LR Equations for Perception of Quality and Patients' Outcomes

MORTALITY: χ^2 = 395.843, p<0.001, R^2= 0.731				
	Coefficient	Standard Error	Wald p-value	OR	OR 95% CI
Perception of quality	-0.364	0.050	<0.001	0.695	0.630 - 0.767
CCI (age not adjusted)	0.136	0.047	0.004	1.145	1.044 - 1.258
Closely monitored patient	-0.944	0.307	0.002	0.389	0.213 - 0.710
FAILURE TO RESCUE: χ^2 = 37.659, p<0.001, R^2=0.318				
	Coefficient	Standard Error	Wald p-value	OR	OR 95% CI
Perception of quality	0.175	0.080	0.028	1.192	1.019 - 1.393
Type of illness	-1.327	0.461	0.004	0.265	0.108 - 0.654
Closely monitored patient	-1.154	0.413	0.005	0.315	0.140 - 0.708
READMISSION: χ^2 = 259.469, p<0.001, R^2=0.590				
	Coefficient	Standard Error	Wald p-value	OR	OR 95% CI
Perception of quality	-0.363	0.036	<0.001	0.695	0.648 - 0.746
Cardiovascular diseases	0.607	0.273	0.026	1.835	1.075 - 3.131
PAIN: χ^2 = 275.636, p<0.001, R^2= 0.568				
	Coefficient	Standard Error	Wald p-value	OR	OR 95% CI
Perception of quality	-0.116	0.037	0.002	0.890	0.828 - 0.957
Type of illness	-0.982	0.247	<0.001	0.374	0.231 - 0.607
Closely monitored patient	-0.641	0.253	0.011	0.527	0.321 - 0.865

Table 6.14: LR Equations for Perception of Autonomy and Patients' Outcomes

MORTALITY: χ^2 = 398.411, p<0.001, R^2= 0.734				
	Coefficient	Standard Error	Wald p-value	OR	OR 95% CI
Perception of autonomy	-0.437	0.060	<0.001	0.646	0.574 – 0.726
CCI (age not adjusted)	0.144	0.048	0.003	1.155	1.052 – 1.268
Closely monitored patient	-0.884	0.311	0.005	0.413	0.224 – 0.761
FAILURE TO RESCUE: χ^2 = 37.553, p<0.001, R^2=0.318				
	Coefficient	Standard Error	Wald p-value	OR	OR 95% CI
Perception of autonomy	-0.206	0.095	0.029	1.229	1.021-1.480
Type of illness	-1.335	0.465	0.004	0.236	0.106-0.655
Closely monitored patient	-1.158	0.414	0.005	0.314	0.140– 0.708
READMISSION: χ^2 = 255.719, p<0.001, R^2=0.584				
	Coefficient	Standard Error	Wald p-value	OR	OR 95% CI
Perception of autonomy	-0.416	0.041	<0.001	0.660	0.609 – 0.715
Cardiovascular diseases	0.586	0.272	0.031	1.797	1.055– 3.061
PAIN: χ^2 = 276.447, p<0.001, R^2= 0.570				
	Coefficient	Standard Error	Wald p-value	OR	OR 95% CI
Perception of autonomy	-0.142	0.044	0.001	0.868	0.796-0.945
Type of illness	-0.962	0.248	<0.001	0.382	0.235-0.621
Closely monitored patient	-0.614	0.255	0.016	0.541	0.328-0.892

6.3.4. Nurses' Process Variables and Patients' Safety Incidents

In this section the effect of nurses' process variables, quality perception and autonomy perception of care on patients' safety incidents (nosocomial infection, falls and medication errors) is presented (Table 6.15). When quality of care perception and

autonomy perception increased by one point each, surgical bleeding risk decreased by 53% and 59%, and life-threatening situations by 37% and 42% respectively. The other patients' safety incidents variables could not been considered in the model because of very low numbers of events occurring during the study period.

Table 6.15: Nurses' Process Variables and Patients' Safety Incidents

Outcome and effect	Unadjusted OR (95% CI)	p value	Adjusted OR (95% CI)	p value
NOSOCOMIAL INFECCION				
Quality of care	1.50 (1.30 - 1.74)	<0.001	n/a	n/a
Autonomy	1.61 (1.36 - 1.90)	<0.001	n/a	n/a
High patient turnover	11.80 (4.74 - 29.40)	<0.001	n/a	n/a
MEDICATION ERRORS				
Quality of care	0.38 (0.29 - 0.48)	<0.001	n/a	n/a
Autonomy	0.33 (0.24 - 0.43)	<0.001	n/a	n/a
High patient turnover	0.01 (0.001 - 0.20)	<0.001	n/a	n/a
PRESSURE ULCER				
Quality of care	0.50 (0.44 - 0.56)	<0.001	1.08 (0.72-1.62)	ns
Autonomy	0.45 (0.39 - 0.51)	<0.001	1.08 (0.67-1.74)	ns
High patient turnover	0.02 (0.01 - 0.05)	<0.001	n/a	n/a
SURGICAL BLEEDING				
Quality of care	0.59 (0.52 - 0.67)	<0.001	0.47 (0.36-0.63)	<0.001
Autonomy	0.54 (0.47 - 0.63)	<0.001	0.41 (0.29-0.57)	<0.001
High patient turnover	0.05 (0.02 - 0.11)	<0.001	n/a	n/a
LIFE-THREATENING SITUATIONS				
Quality of care	0.52 (0.47 - 0.58)	<0.001	0.63 (0.56-0.71)	<0.001
Autonomy	0.47 (0.42 - 0.53)	<0.001	0.58 (0.51-0.67)	<0.001
High patient turnover	0.02 (0.01 - 0.04)	<0.001	n/a	n/a

'n/a' indicates that it is not possible to build adjusted models due to small sample size; 'ns' not statistical significance

Logistic regression equations for perception of quality and patients' safety incidents outcomes are presented in Table 6.16, and for perception of autonomy in Table 6.17.

When surgical bleeding was analysed, logistic regression has a R^2 of 92% and was globally significant. When perception of quality was increased by one point, surgical bleeding risk decreased by 53%. It increased by 21% when Charlson Comorbidity Index (CCI) increased by one point. In relation to life-threatening situations, logistic regression has a R^2 of 59% and was globally significant. Risk decreased by 37% when perception of autonomy increased one point; it reduced up to 92% when the patient did not need close surveillance for 6 hours continuously.

Table 6.16: LR Equations for Perception of Quality and Patients' Safety Incidents

SURGICAL BLEEDING : χ^2 = 179.626, p<0.001, R^2=0.870					
	Coefficient	Standard Error	Wald p-value	OR	OR 95% CI
Perception of quality	-0.748	0.143	<0.001	0.473	0.358-0.626
CCI (age not adjusted)	0.194	0.091	0.033	1.215	1.016-1.452
LIFE-THREATENING SITUATIONS : χ^2 = 593.849, p<0.001, R^2=0.929					
	Coefficient	Standard Error	Wald p-value	OR	OR 95% CI
Perception of quality	-0.459	0.058	<0.001	0.632	0.564 – 0.707
Closely monitored patient	-2.522	0.779	0.001	0.080	0.017-0.370

Table 6.17: LR Equations for Perception of Autonomy and Patients' Safety Incidents

SURGICAL BLEEDING : χ^2 = 181.651, p<0.001, R^2=0.875					
	Coefficient	Standard Error	Wald p-value	OR	OR 95% CI
Perception of autonomy	-0.901	0.172	<0.001	0.406	0.290-0.569
CCI (age not adjusted)	0.211	0.092	0.022	1.235	1.031-1.480
LIFE-THREATENING SITUATIONS : χ^2 = 595.500, p<0.001, R^2= 0.930					
	Coefficient	Standard Error	Wald p-value	OR	OR 95% CI
Perception of autonomy	-0.541	0.068	<0.001	0.582	0.510-0.665
Closely monitored patient	-2.464	0.783	0.002	0.085	0.018-0.395

6.4. Chapter Summary

In this prospective observational study, descriptive statistics were used to explore patients' and nurses' characteristics. The majority of the patients were located in the emergency department before HDU admission and had a medical illness, most frequently from circulatory and digestive systems. In-hospital mortality was 9% decreasing to 4% when it was analysed for the HDU. Failure to rescue occurs in 8.6% of patients with significantly lower values in females. These outcomes values increased when patients who required close surveillance are considered (surveillance every 15 minutes for at least six hours at any time of the HDU patient admission). Close surveillance was performed when a patient was hemodynamically unstable and was at risk of suffering some complication. In these patients, HDU mortality rose by 6% and failure to rescue by 26.5%. When considering patients safety incidents, the same trend was observed. Surgical nosocomial infection increased by 24.3% while medication errors where only recorded in close surveillance patients 1.3%.

In relation to nurses, the majority were females with a mean age of 38 years; only 4% of nurses were men. When comparing by shift, the youngest nurses were on the afternoon shift (35±9 years). Sixty two percent of the nurses were employed permanently, although shifts ranged between the extremes of 50% permanent employed staff in the morning shift up to 100% on the night shift-1. Sixty percent of the nurses reported having

a higher degree of which 54% were in critical care patient area. A higher proportion of nurses with higher degree level (78%), were found on the morning shift whilst on night shift-1 the lowest rate was observed (29%). The mean length of hospital experience was 14 years and 6 years within the HDU; nurses with more years of experience were identified on night shifts. Nurses' perception of care quality was on average 7.6 and for their perception of autonomy, 6.6 on average. Nurses on night shift-2 gave higher values to perception of care quality while nurses on the afternoon shift gave higher values to their level of autonomy. The quality of care perception was inversely correlated with age (r= -0.35; p= 0.02), years of experience in hospital (r= -0.33; p= 0.03) and in HDU (r= -0.34; p= 0.01). No statistical significant correlations were found between perceptions of autonomy and nurses' characteristics. Sixteen needle stick injuries occurred during the study period, half of them in the afternoon shift. No injuries occurred in night shift-1.

A summary of findings from the inferential, hypothesis tests is given below, separately for each hypothesis. . The choice of multiple regression model was made based on clinical considerations and the intention to replicate the analyses of other work on nursing staffing and outcomes, in addition to statistical reasons. However, it is important to highlight at this point some assumptions and limitations. As it was stated in Chapter Five, the model assumes that each of the exposure variables included acts independently and contributed to explain the variance in an additive manner. However this assumption might be inappropriate. For example, the variables of age, educational level and length of experience are all included as separate variables (with significant contributions to the explained variance) in the model. Reflecting on this, it is both possible and plausible that these variables are either all measuring similar things (the problem of co-linearity) or may operative in an interactive manner (interaction effect). Thus, the older the nurse the more years' experience she might have (she too will have a greater possibility to access to higher education). This possible co-linearity as well as possible interactive effect may cause problems with estimation, and thus reduce the predictive power of the model. A further limitation to note is the fact that some of the variables have wide confidence intervals, with implications over the predictive power of regression model. Future research could explore the implications of these issues and utilise the capacity of the multiple regression model to estimate and test interaction effects whether the independent variables are categorical or continuous and explore the value of other data transformations. It is recognised that the logistic transformation of the binomial probabilities is not the only transformation available, but may be the easiest to interpret.

Hypothesis 1: Nurses' structure variables influence patients' outcomes in a HDU. The effect of all nurses' structure variables (except nurse turnover) was maintained after adjusting the model for mortality and failure to rescue. When considering the effect of nurse experience, 32% decrease in mortality and 13% decrease in failure to rescue could be expected from increasing nurse experience by one year. When adjusting the models the effect disappeared, for three nurses' structure variables on readmission, while for pain the effect disappeared for six variables. Nurses' age, experience, category, and education had a significant effect in decreasing the risk of readmission, both in the unadjusted and adjusted patients' characteristics estimations. Furthermore only nurses' HDU experience and nurses' work category had statistically significant effect in decreasing the risk of pain.

Hypothesis 2: Nurses' structure variables influence patients' safety in a HDU. The influence of nurses' structure variables was maintained after adjustment for pressure ulcers, surgical bleeding and life-threatening situations. If the HDU nurse experience increased by one year, surgical bleeding risk decreased by 55% and life-threatening situations risk by 67%.

Hypothesis 3: Nurses' process variables influence patients' outcomes in a HDU. Their influence of nurses' perception of quality of care and of autonomy was maintained after adjusting for all patients' outcomes variables considered (mortality, failure to rescue, readmission and pain). When perception of quality and of autonomy increased by one point, mortality risk decreased by 31% for the perception of quality and 35% for the perception of autonomy.

Hypothesis 4: Nurses' process variables influence patients' safety in a HDU. When analysed the influence of nurses' process variables in patients' safety incidents the same trend as in hypothesis 3 was obtained. When perception of quality of care and autonomy increased by one point each one, surgical bleeding risk decreased by 53% and 59%, and life-threatening situations by 37% and 42% respectively.

Focus now turns to the findings for Study II, the exploratory interview study. These are presented in two parts: Chapter Seven reports on the patient perspectives and Chapter Eight on the nurses perspectives. The findings from both studies are brought together and discussed in Chapter Nine.

7.1. Introduction

This Chapter and Chapter Eight present the findings for the exploratory interview study. The purpose was to develop a theory to explain which aspects of nursing care influenced patient outcomes and safety and what was perceived as an outcome of nursing within a HDU from both patient and nurse perspectives. As described in the previous Chapter, Grounded Theory methodology was used to analyse data obtained from in-depth patient interviews and from focus groups and in-depth interviews with nurses (Chapter Eight).

This Chapter is divided into a number of sections, commencing with section 7.2 which provides a profile of the patients. Starting from section 7.3 findings are presented, led by the core category 'adapting to HDU admission', followed by the main categories associated with this core category, 'perceiving the environment' (section 7.4), 'interacting with relatives and professionals' (section 7.5), 'supporting elements' (section 7.6), 'feelings about care' (section 7.7) and 'consequences of being cared for' (section 7.8). The dimensions of these categories and their relationships to the core category are explained and sub-categories explored. Data from the interviews is used to support these categories and to assist in illustrating the emergent theory. The original language versions of the direct quotations, either in Catalan or Spanish, presented in this Chapter can be found in Appendix A ordered as shown in the Chapter. Each participant has been assigned a code to ensure anonymity and confidentiality. Patients are specified by the letter 'P' followed by a number, indicating the chronological order in which interviews were conducted. The Chapter concludes in section 7.9, with a summary of the findings from the patient interviews.

7.2. Participant Profiles

The sample consisted of twenty-two patients. Tables 7.1 to 7.4 display individual patients' data relevant to the analysis. Table 7.1 presents patients' demographic data (age and gender), location prior admission, satisfaction, interview data information and reason for HDU admission. Participants' mean age was 51 ± 19 standard deviation (SD) and ranged between (32-92) years; 54 % of the participants were female and 81% of patients were

admitted to HDU from the Emergency Department (ED). At the end of their interview, patients were asked to rank their satisfaction level with the care received in HDU; the mean value was 8.7 ± 1.3 (range, 6-10). The next column shows the length of each interview in minutes; the mean length was 28.4 ± 9.3 (range, 11-48). The number of quotations refers to the individual patients quotations used in this Chapter to reinforce theory building. The last column indicates the reason for HDU admission.

Table 7.1: Patients Demographic Data, Location Prior Admission, Patient Satisfaction, Interview Data Information and Reason for HDU Admission

Patients	Age	Gender	Location prior to HDU*	Satisfaction level	Interview length	Number of quotations	Reason for HDU admission (RFA)
1	77	M	ED	9	40	1	Gastrointestinal bleeding
2	78	F	ED	10	38	5	Lower GI bleeding
3	83	F	ED	10	45	3	Acute myocardial infarction
4	53	M	ED	7.5	45	11	Upper GI bleeding
5	33	F	ED	10	11	4	Pancreatitis
6	60	M	ED	8	34	1	Upper GI bleeding
7	75	M	ED	10	48	4	Syncope
8	75	M	ED	10	30	5	Pancreatitis
9	92	F	ED	8	23	1	Atrioventricular block
10	35	M	ED	10	23	7	Gastrointestinal bleeding
11	67	F	ED	9.5	35	4	Retroperitoneal abscess
12	75	M	ED	10	35	7	Acute myocardial infarction
13	55	F	ICU	10	38	2	Stroke
14	33	M	ICU	7	28	6	Pneumonia
15	69	M	OR	8	12	1	Hepatocarcinoma
16	34	F	ED	10	35	3	Occipital arteriovenous malformation and subarachnoid haemorrhage
17	33	F	ED	8	28	4	Encephalitis
18	46	M	ED	10	35	3	Hepatocarcinoma
19	32	M	ED	10	35	3	Occipital arteriovenous malformation and subarachnoid haemorrhage
20	71	M	ED	8	31	2	Pancreatic Cysts
21	41	F	ED	7	30	8	Pneumonia
22	55	F	GW	6	36	9	Neurosurgery

M (male); F (female); *ED: Emergency Department; ICU: Intensive Care Unit; GW: General Ward; OR: Operating Room

Table 7.2 show patients profile according to the multi-layered crosstab sampling frame. Numbers included in shadowed cells represent the patients in each; each number corresponds to the interview patient while the following 'm' or 'f' indicates the participant gender, thus, 'm' for male and 'f' for female. Table 7.3 summarises patient safety issues based on the number of patient conditions and types of invasive procedures. Patients' conditions are indicated as a single (patient presented only with the reason for admission without comorbidities) or multiple (patient presented with the reason for admission with comorbidities). Invasive procedures were differentiated as low (peripheral or central

venous catheter, nasogastric tube or urinary catheter) and high (endotracheal tube, surgery, cardiac catheterization, gastrointestinal endoscopy or pacemaker placement). Patients are presented from the least to the most complex safety issues identified.

Table 7.2: Patients Profile According To The Multi-Layered Crosstab Sampling Frame

				OUTCOMES						
				symptom and signs control						
				rapid			longer			
				pain control						
				rapid	longer		rapid	longer		
SAFETY	Nº conditions	Single	Low	17w	16w/20m	3	21w	5w	2	5
			High	10m	18m	2	9w/11w	4m	3	5
				2	3	**5**	3	2	**5**	10
		Multiple	Low	3w/7w	19m	3	13w	8m/22w	3	6
			High	12m	6m	2	2w/15w	1m/14m	4	6
				3	2	**5**	3	4	**7**	12
				5	5	10	6	6	12	**22**

Table 7.3: Patients Safety Issues Based on Number of Conditions and Invasive Procedures

Patients	Conditions / Invasive Procedures (IP)	SAFETY			
		nº conditions			
		Single		multiple	
		IP		IP	
		low	high	low	high
5	*Peripheral catheter, urinary catheter, nasogastric tube*	*			
16	*Peripheral catheter*	*			
17	*Peripheral catheter*	*			
20	*Peripheral catheter*	*			
21	*Central venous catheter, peripheral catheter*	*			
4	*Gastrointestinal endoscopy*		*		
9	*Pacemaker placement*		*		
10	*Gastrointestinal endoscopy*		*		
11	*Surgery*		*		
18	*Cardiac catheterisation*		*		
3	Cancer / *peripheral catheter, urinary catheter*			*	
7	Hypertension / *peripheral catheter*			*	
8	Hypertension; cancer *Central venous catheter, urinary catheter, nasogastric tube*			*	
13	Hypertension / *peripheral catheter*			*	
19	Hypertension; cancer; chronic obstructive pulmonary disease *Central venous catheter, peripheral catheter*			*	
22	Chronic obstructive pulmonary disease *Central venous catheter, peripheral catheter*			*	
1	Arrhythmia; hypertension; diabetes mellitus; dyslipidemia *Gastrointestinal endoscopy*				*
2	Arrhythmia; hypertension / *gastrointestinal endoscopy*				*
6	Dyslipidemia / *gastrointestinal endoscopy*				*
12	Hypertension; cancer; diabetes mellitus / *cardiac catheterisation*				*
14	Hypertension / *chest tube*				*
15	Cancer / *surgery*				*

To avoid data duplication, in the single condition columns only the invasive procedures are itemised as the reason for admission is shown in Table 7.1. Invasive procedures are indicated in italics and highlighted in green to differentiate them from conditions which are in normal text. To ensure clarity in Table 7.3 if the patient's invasive procedures are classified as high, then low invasive procedures for this patient are not specified.

Table 7.4 presents data associated with outcomes based on symptoms, signs and pain control. A rapid response to a symptom was when symptoms, signs or pain control were controlled within 2 hours after assessment or identification and as longer when this occurred after two hours. Patients are presented sorted from rapid to longer response to symptoms, signs and pain control.

Table 7.4: Patient Data Associated with Outcomes Based on Symptoms, Signs and Pain Control

Patients	Symptoms, signs and pain control	OUTCOMES			
		symptom and signs control			
		rapid		longer	
		pain control		pain control	
		rapid	longer	rapid	longer
3	Atrioventricular block / Chest pain	*			
7	Dizziness / Chest pain	*			
10	Nausea –vomiting / Abdominal pain	*			
12	Ischemic compression / Chest pain	*			
17	Headache	*			
6	Nausea –vomiting / Abdominal pain		*		
16	Loss of memory / Headache		*		
18	Headache / Chest pain		*		
19	Dyspnea / Chest pain		*		
20	Hypertension / Abdominal pain		*		
2	Melaena / Abdominal pain			*	
9	Debility / No pain			*	
11	Surgical infection / Surgical y pain			*	
13	Hemiplegic / Headache			*	
15	Icterus / Surgical pain			*	
21	Fever / Chest pain			*	
1	Melaena / Abdominal pain				*
4	Melaena / Abdominal pain				*
5	Nausea –vomiting / Abdominal pain				*
8	Nausea –vomiting/ Abdominal pain				*
14	Pneumothorax / Chest pain				*
22	Paraplegia / Discomfort – general pain				*

7.3. Core Category: Adapting to HDU Admission

The core category emerging from the patients' data was 'adapting to HDU admission'. Founded on previous theoretical nursing work, in this PhD patient adaptation is understood as a individual's capacity to mobilise internal and external resources; furthermore it is identified as an essential element for patient safety and outcomes. Based on the adaptation model described by Callista Roy (1970:299; 1971), Mastal (1980) defined the patient adaptation process as a key element through which nurses can support promoting and advancing along the health-illness continuum when the adaptive process occurs or the desired adaptive end state is achieved. Roy's adaptation model was derived deductively from other theories with contemporary adaptation, humanistic and nursing perspectives (Meleis, 2007:625). Roy states that the goal of nursing is to promote adaptation explicitly assuming that a person's adaptation is a function of the stimulus he is exposed to and comprises a zone indicating the range of stimulation that will lead to a positive response (Roy, 1970, 1971).

Adaptation reflects biopsycho-social behaviour occurring within a person's individually defined range of usual behaviour (Mishel, 1988a); an adaptation process implies change, whereby an individual retains his integrity within the realities of his internal and external environment (Marriner, 2006:229). From the study data, and considering the above framework, it was possible to identify five main categories that contributed to the core category containing aspects of nursing care that promote or prevent 'adapting to HDU admission'. The five main categories identified were 'perceiving the environment', 'interacting with relatives and professionals', 'supporting elements', 'feelings about care' and 'consequences of being cared for'. This core category was constructed taking into account positive and negative dimensions about nurse attributes that influence the process of care and as a consequence may have an influence on patient outcomes and safety through the adaptation process contained in these five interrelated main categories. Figure 7.1 shows the final integrative diagram.

There was a sequence until the core category 'adapting to HDU admission', was finalised through the examination of theoretical memos and the properties of the main five categories. The relationship in the final integrative diagram is considered to be circular, as all of them may occur simultaneously during the specific period of patient HDU admission.

It was also possible to identify in these sub-categories the three classic elements from Donabedian's framework (Donabedian, 1966). Thus 'perceiving the environment' would be within the structure, 'interacting with professionals and relatives' and 'supporting elements' within the process. As consequences of the above, outcomes would be 'feelings about care' and 'consequences of being cared for'. Each category, together with supportive data is elaborated in the following subsections, presented and compared with previous research findings.
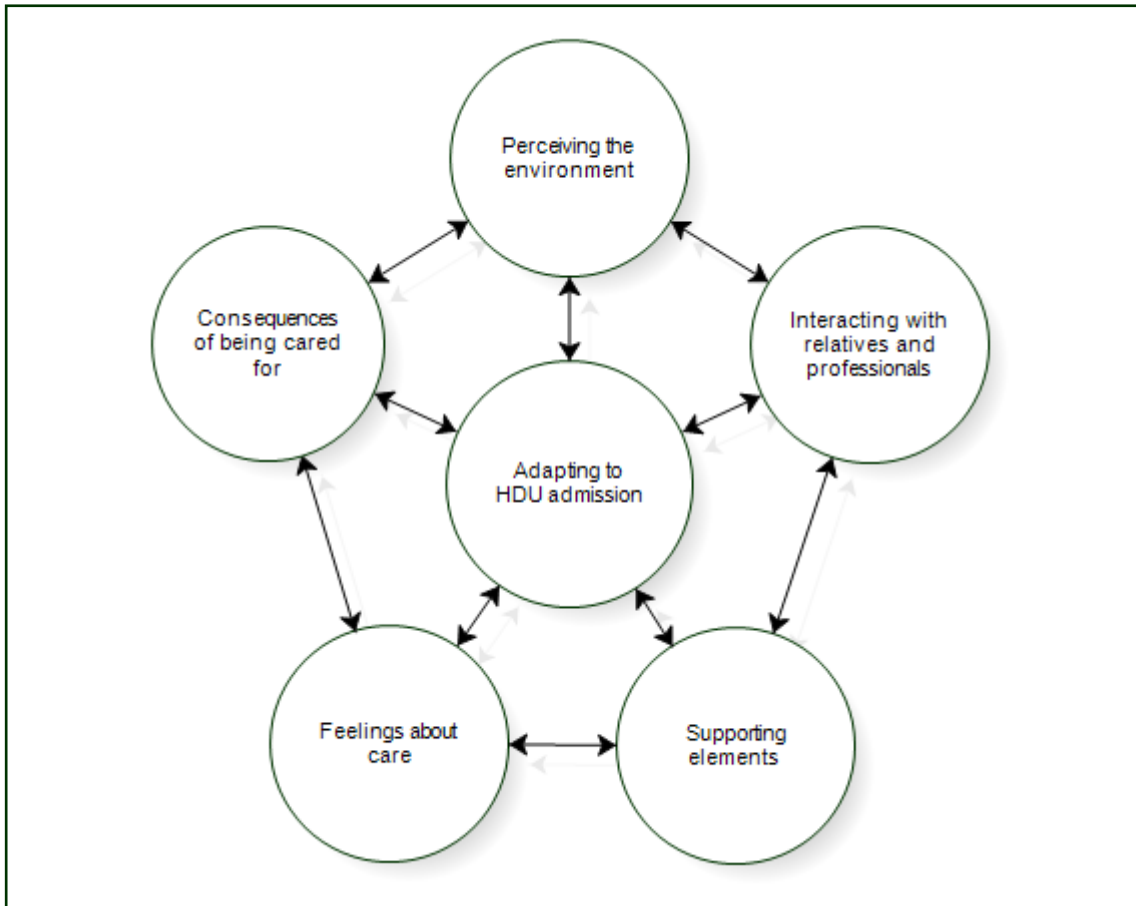
Figure 7.1: Final Integrative Diagram

7.4.   Perceiving the Environment

'Perceiving the environment' emerged as a category frequently connected with patient adaptation to HDU. How patients were 'perceiving the environment' seemed to influence their adaptation to the new situation. Several participants expressed feelings related to environmental perceptions specifically the HDU physical layout and its implications for nurses care processes in promoting or opposing this adaptation. These might then impact on patients' outcomes and safety. The following quotations illustrate

how at the point of admission nurse care processes helped to promote patient adaptation as it was the case for Patient 10. For Patient 2, their experience was completely the opposite implying a challenge to patient adaptation.

P10- Yes, I mean, it seems that they're helping you, they make you feel comfortable […] they take great care of you, they are very caring… calm... They relaxed me. Because when I arrived here... I was... nervous...I …nervous. My nerves were ragged. Then they said 'Relax … you'll be fine here... you'll be just fine here'. And to tell the truth, they made me feel calm and I'm fine

P2- I rang the bell, but it was just ignored […] It was tense […] because if she had left me comfortable I wouldn't …I wouldn't have done what I did... I just wanted them to come and fix the bed

The care environment was often unknown to the patient; in addition to changes in health status and its implications, the patient was in an unfamiliar environment initiating a process of adaptation that can be conscious or unconscious apart from concerns about a new health situation. Within 'perceiving the environment' emerged two main sub-categories: 'safety elements' and 'discomforting elements'. As shown in the examples above, how P10 perceived the environment made him feel safe, whilst the situation as perceived by P2 generated discomfort in this patient. Both issues are addressed in depth in the next two subsections.

7.4.1. Safety Elements

All informants stated as 'safety elements' access to a call bell and the nurse's response to this bell, resulting in their presence at the bedside. Most of the patients believed that access to a call bell implies control over their situation (P1), just in case something happened, or something was needed (P4). Therefore access to a call bell is clearly related to feeling safe because the patient could summon the nurse's presence to the bedside. Moreover consideration was given to not disturbing the nurse (P5).

P4- Yes ... they leave ... they leave … 'Do you have the bell to hand?' They always say 'If you need anything, you have it there.' Yes

P1- Of course, I just ask for it... if they forget, I ask for it if I need something …

P5- I've got the bell here just in case something happens. I try not to complain too much so as not to bother them

The following quotations indicate the meaning of the bell and its relationship to the nurse's presence (P10 and P17). The interviews indicate that the nurses made timely responses, and for P8 this was because of their high level of training. The patient rings the bell because he wants the nurse close by, in order to respond to discomfort or to respond to the patient's needs (P8). The bell was perceived to be reserved for important things, such as when something new happened or if the need arose to address something that they thought was really important (P8 and P4). They had been told by the nurses that when something in their health status changes they must let the nurses know.

P10- Always. It's always here. I press it and she's here right away

P17- I ring and they come, really fast. I don't see anyone here in the station, but wow! They come quickly

P8- Well, what... what's up with me?... if you want anything... 'Do you need anything?' No... They're...they're highly trained. Yes

P4- But me, for something trivial, I don't ring. Some people are calling for them constantly

Bell availability was thus a safety intervention put in place by nurses that leads to the nurse's presence. P12 described his situation; the bell was the trigger for a series of nursing interventions to avoid the consequences of extreme compression in the arm after a cardiac catheterisation.

P12- Yes, I call right away... I have the bell here to ring whenever I need anything... I ring and they come immediately. This arm was really hurting me... [...] There was no circulation. So right away a cardiologist and... a heart nurse came... a ... a heart specialist and they had a look, they took off this thing out, and now I'm just fine. I mean, they take care of you, really good care, eh? I told this girl what was happening. She came, touched me, because I couldn't move my fingers, eh? ... They were stiff

No differences in bell perception could be discerned between gender or type of patient. In relation to monitoring devices, although these constitute safety devices they were perceived by patients as very limiting and noisy. This is the reason why these are presented within discomforting elements in the next section.

7.4.2. Discomforting Elements

Most patients discussed 'discomforting elements' the experience of which had the greatest impact on them. They felt immobilised because of these monitoring devices which they considered often stopped working producing a loud noise which was aggressive making it difficult to sleep. When the noise was prolonged it produced discomfort. All these elements made patient comfort difficult and limited the patient's capacity to adapt. It was therefore judged that this may affect patients' outcomes and safety. The quotations below illustrate these statements about cardiac monitoring; P2 refers to the discomfort generated by a monitoring cable while P18 and P4 refer to the noise emitted by the monitors.

P2- I couldn't, I couldn't do anything with all the wires and things on me...

It is specially significant that P18 attributes the noise to a lack of attention to the monitor by the nurses and P4 attributes it to a monitoring malfunction. Surprisingly P4 rated their satisfaction level as 10 which can be interpreted that patient satisfaction is more related with health professional interactions than with physical structure and available devices.

P18- May be the only thing is that I find that they let the machines go off a lot

P4- Yesterday I was a nervous wreck. Besides, I couldn't sleep because I was feeling poorly ... because... well because these machines are useless ... they don't work well [...] You know, they go off and start going beep-beep-beep...

The second discomfort element were the rooms (boxes); patients described the HDU as producing a claustrophobic sensation, which gets worse when the light was off and the door closed. According to patient data it was not possible to be comfortable within the rooms unless asleep. The majority of patient had the room lights off but received enough light in the room from the corridor lights. Lights, situated above the patient's headboard, were described as intensive and annoying to patients; P4's description illustrates the psychological impact of such artificial lighting.

P4- It's all in the mind but suddenly ... the flash... It... it's as if you were... you probably think I'm mad, right? It reminds me of those rooms where Hitler used to put the Jews... to be incinerated or to take out … the same flash in my face, for a split second you end up... you know what I mean? It's too much ... and if they want to keep it like that, drop the intensity...

One participant emphasised the difficulty in knowing whether it was day or night in addition to losing track of time due to lack of items in the surroundings that allow the temporal orientation of the patient.

P16-…and you don't know... the... what the weather's like. You've no idea. I mean, me here, between these 4 walls, I say, 'What's today? What's it like today?'

Moreover it also becomes manifest that patients experienced claustrophobic feelings when the door remained closed, in contrast to when it remained open which produces feelings of freedom that can, in turn, be related to feeling safe as a result of maintaining contact with the healthcare team, in short, detecting nurses' presence.

P22- Nothing, because... it's... Just imagine it. They close everything and turn off the light... Crumbs! Being here is... is like being stuck in a box... And it's horrible. But if the door's slightly ajar, you see the light from outside... Because, of course I'd prefer light from the light outside, because these are ... extremely bright. And so, with the light from outside … and it seems you're with... as... freer, right? Freer. Even though you're stuck in here, you're freer, because you see movement out there. But if you're closed in here, you feel like you're going to choke... That's how it seems to me

It was interesting to highlight that although patients were referring to discomforting elements, in the quotation above the nurses' presence emerges as a conterbalancing element. As P22 describes the reason to avoid having the door closed, which exacerbated the claustrophobic sensation, was driven by the need to know that someone, in this case the nurses, were outside the box. While the other quotations presented in this section were from males referring to discomforting elements, P22 was a female who described a discomfort element but pointed out the importance of the nurses' presence for her. Both aspects had clear implications for patients' adaptation and safety first of all, increasing or decreasing the possibility of patient disorientation, and second, helping nurses to perform a comfortable and safe care process. No common element between these patients was identified; note that three of them rated their level of satisfaction as 10 (P2, P16 and P18), P4 as 7.5 and P22 had a lower satisfaction level of 6.

7.5. Interacting with Relatives and Professionals

This section sets out how patients perceived the interactions with relatives and professionals during their HDU admission. From the relatives' standpoint, it reveals how interaction with the family may promote or prevent patient safety and adaptation, in addition to improving their condition, not only from a physical but from a holistic viewpoint that includes the family's ability to build a healthy environment for the patient. The most common experiences talked about by patients was 'being concerned about relatives'. This subcategory appears to differ in relation to the kind of interaction that patients wished to maintain with the relatives. The second subcategory identified, 'recognising teamwork', was strongly articulated by all patients taking into account several characteristics of teamwork that influenced how professionals interacted with patients. 'Identifying barriers', the third subcategory, was in some ways closely related with the other sub-categories that comprised 'interacting with relatives and professionals'. Each subcategory is now discussed in turn.

7.5.1. Being Concerned About Relatives

This paragraph provides information to help understand patient quotations about relatives. Nine years ago in Spain (law 42/2002) and eleven years ago in Catalonia (law 21/2000), laws about information rights concerning patients' health and autonomy as well as clinical documentation, placed patients as central and active subjects in respect of decisions regarding their health. However the health system is still very protective, meaning that there is not always active involvement of the patient or their relatives in patient care, and this situation is exacerbated when dealing with patients who have chronic conditions.

As is illustrated from P22's quotation, relatives are the patient's informal carers when they are at home and try to be informal carers also in hospital; this fact is important specially in situations such as this lady's. She is very dependent and her husband takes care of her at home.

P22- Of course! I feel safe when my husband's here. Then I feel really safe... Yes, yes, because, as I said, he's been doing this with me for 6 months. He always helps when he's here...

Whatever the reason for admission, either acute (P17) or an exacerbation of chronic illness (P22), patients did not understand why relatives could not be with them in addition to help in caring when they are at the HDU. Likewise when caregivers' tasks at home

involved hands-on patient care, it became more difficult to accept their exclusion from patient care when admitted to the HDU (P22).

P17- Sometimes a relative... No, well, let me see, for example, every time I want... I want to sit up or fix the bed a bit... I do that myself... and I do it as best I can

P22- They should be a bit more flexible, knowing that the only person I have is him. Even him, being here helps, you know what I mean? And … there are nurses who don't like it either... They don't like it that... I mean, that's why I say that it depends on each person... There are nurses who don't like him being around...

Nurses' decisions affected the degree of relatives' involvement; some nurses requested relatives support during mealtimes (P3) or when the patient showered (P11) because this can promote the process of care.

P3- He spoke to my nephew earlier today, at noon... Nephew, come at mealtime…

P11- But when my husband comes, I go over there... I have someone to help me, if I go here, go there … for water, I soap myself with a sponge a bit and I have a shower, which refreshes me...

In previous quotations (P3 and P11), both the participants agreed that it was helpful to have relatives to promote caring interventions. In contrast it was also stated that relatives' presence can prevent the nurses' process of care which as a consequences may affect patients' safety and outcomes. Differences were observed depending on patient, relative and nurse' interactions and agreements. In the following quotation P19 describes his perception about the number of relatives visiting, potentially preventing nurses process of care.

P19- For me, it's necessary, because I understand that... I'm here all alone with just my wife. But...there are people who have 90 relatives... And the whole troop comes... And keeping them in check!! Them poor... poor people! Only 2 are supposed to come in and there are 90 waiting... If the 90 go in, how can the nurses work?

Relatives support was and could range from constituting an important physical and emotional support for the patient or a guarantee of comfort as P22 indicates. Most patients relied on the family for care. Patients may feel guilty about being in the HDU because of the impact on their family but at the same time realise about their relatives' love and support as denoted by P13.

P22- He always helps when he's here ...he helps clean me ... you know? He helps me all he can... He's not the typical visitor who comes to see you and that's it

P13- Yes, I... I feel bad for everything that's happened to me for my children... because their father died some months ago. And damn it, it's a terrible blow. This never happened to us before… to me, nothing. And now it's one blow after another. Poor kids! And I feel bad for them, but...People sometimes argue a lot with their children... I don't argue with my kids, but you realise just how much they love you, don't you?

Patients expressed concerns about their relatives, specially when patients had an active role in caring for them at home or when the patient depends on the relative for care; furthermore it is not about gender. The following quotations from P21 a young lady with two little children at home and P11, an old man who cared for his wife with

Alzheimers, shared the same feelings. They feel cared for in hospital and do not need anything else than know that her or his family was well cared.

P21- No. As long as my children are cared for, I don't care. They can come as little as they like because the main thing for me is my children. I mean, as long as they take care of them, because here, in theory, I'm being looked after. I mean... it's a lot of work, because both of them are small

P12- Yes, yes, yes. It's all being looked after, yes. My daughter does it... Now... now my son goes to fetch her at the Day Care Centre, takes her home for supper, then takes her to my house, and my daughter goes there and stays with her...

Both these patients presented with situations which they wanted to overcame due to the pressure they have at home which could be related to the need for a rapid recovery. P12 is his wife's informal carer (she suffers from dementia), while P21, a young lady, has to take care of her two young children. P12's incident was described above on page 162 within 'consequences of being cared for'.

In contrast to P12 and P21, quotations from P11 and P22, both ladies with a long term illness, expressed concern for their husbands. It was interesting to notice the difference between both situations; in the first two quotations (P12 and P21) patients were in charge with his/her relatives while in contrast for P11 and P22 relatives were in charge of their condition and situation.

P11- Yes, for the moment. Let's see.... first of all, my husband keeps me company... I'm worried, maybe because I don't like it much.... just... what worries me most is that my husband says he's very lonely

P22- So ...well, my husband, he's here alone... He's staying in a... one of these houses that rent rooms with a bathroom... So, the poor man, you know …

For a patient admitted to the HDU 'being concerned about relatives' involved experiences that ranged from feelings of safety if their relatives are allowed to collaborate in their care, most specially in those patients with chronic illness, to feelings of guilt associated with the fact of being sick and unable to meet family needs. Nurses supervise patients' and relatives' interactions. It was not a matter of workload or the visiting hours schedule, rather it appears to be an individual nurse's decision to request relatives support for patient care. Relatives' support was huge and could range from constituting important physical and emotional support for the patient or a guarantee of comfort. However relatives' presence was also considered to prevent nurses' process of care.

7.5.2. Recognising Teamwork

The analysis suggests several characteristics of teamwork. Patient perception is that nurses communicate effectively between themselves; in addition they state that nurses helped each other and work in collaboration (P4 and P7). Teamwork was not influenced

whether the same nurses were working or not within a specific shift, or if nurse is a novice or an expert (P5).

> *P4- They do their job and that's it. And they talk a lot to each other, they help each other... they help each other... 'Wait ... Can I help you? ... Okay, I'm coming' ...And so on*
> *P7- Yes. I see... that when you come in here, I see them like a team...because I see them help each other a lot, and that's a team*
> *P5- 'Today is my first day.' ...And she explained to me, 'But we've already talked about it and this has to go here and there'*

P5 quote is the literal transcription of the novice nurse's words to the patient. The situation was that in the face of a query about the patient's medical treatment, the novice nurse asked an expert nurse, how to do it which transferred knowledge as to how treatment should be administered. The novice nurse shared with the patient that it was her first working day in the HDU, saying to the patient that he did not need to worry because she was supported by her colleagues. Because she had some doubts in relation to a specific treatment issue and after she asked about it she now knows how to do it. This reveals the sense of responsibility that the novice nurse feels. That simple fact reflects the importance of teamwork to ensure patient safety, and the patient repeating the words indicates their importance for the patient and the involvement of safety and trust.

Patients knew that they had a nurse in charge of their care but also that the nurses were a team. This did not mean that this nurse always took care of the patient during the shift; rather any nurse could attend to the patients' needs (P14).

> *P14- Today, for example, it's [nurse], right? But then there are other nurses... because maybe X isn't around and they see to me, right?*

This may depend on whether the nurse in charge was attending to other patients, or that when the patient asked for something then it depended on the proximity of the nurse. This collaboration implies that the patient always has his needs met, if not by their own nurse then another nurse attends. Team-working in the HDU environment therefore becomes a key activity for early detection of problems. As Benner stated during surveillance good communication allows the exchange of patient assessment and facilitates a timely response to a critical or life-threatening situation (Benner et al., 1999:426).

Most of the patients used teamwork as the common word to describe their interactions and experiences with nurses; furthermore it was revealed that this constituted an important element of feeling care, safety and trust.

7.5.3. Identifying Barriers

Being bed bound was identified as having emotional implications for patients. Whilst they are in bed, patients are more sensitive to relationships and about what it is going on around them. Patients feel strange as illustrated by P22. This situation is in some way closely related with the feeling of being a patient and as a consequence of these patient feelings it is possible to 'identifying barriers' that prevent patient adaptation.

P22- I don't know... And little things like that, right? That... I don't know, I don't know... I don't know what to say... Maybe because you're also in bed... it seems like you check everything more and all and.... The least little thing bothers you, you know? … But …

Patients also highlight, as a barrier to interact with professionals, inequalities in the relationship. Patients feel that they are in a weaker position by the mere fact of being a patient; if they are weak and have no urge to ask or discuss things as stated by P8.

P8- Indeed! Yes, yes, yes. Because you ... you haven't got the courage to say 'Well, that [should be] this way, or this should be that way'

Power relationships between professionals and patients also reveal the power relations implicit between nurses and medical professionals. Power relations can affect decision making and therefore have implications for interventions and as a consequence for the outcomes of these interventions. P21 was describing a situation in which the physician stated that she must put on the mask without more information as to why. When the patient asked the nurse, she said that it was what the doctor said. Patient identified uncertainty in the nurse's response which she was transmitting to the patient.

P21- 'Put on a mask'. And I say, 'Why do I have to put on a mask?'... She says, 'No … it's what the doctor said' …and I saw she was a bit shy and insecure. But she made feel insecure too… And as well as that … it was worse with the medical problem

Another barrier was the lack of patients' knowledge about who is who between occupational and professional groups; this problem was more significant when considering registered nurses and auxiliary nurses. There were no distinctions in uniform and sometimes both performed the same tasks. From the identity card it was possible to identify the occupational category of each worker but it was printed in a very small letters which was difficult to read without different colours that allowed identification of each occupational group.

P14- Well, you see... in ... in using the equipment. You see how easily they... they handle the equipment. Or you don't. I mean, you see nurses... sure, you don't know who's a nursing assistant and who's a nurse here. So you can't distinguish…

This difficulty could have implications for registered nurses as professionals because if a professional group is not clearly identified, the benefits or consequences of their work will be diluted through this lack of identity and therefore registered nurses actions will not

be given any or due recognition. Moreover there is also a safety issue concerning communication of problems or information to the most appropriate professional.

Diversity emerged as another barrier when patients pointed out the importance of feeling cared for by people from their own culture. P12 stated that he liked having people native to this region caring for him.

P12- But... but I like having people from here, we understand each other and they have some education [...]...I think so. I think so. Depending on what you say, they understand, and there are others, and they don't understand... the same, eh? [...]You say something to anyone from here, and they know what's going on, because the culture is shared.

In the above last sentence the patient was thinking about 'knowledge that is shared by the vast majority of people who live in a particular culture', in short, common sense (Phillips, 2008:56). From this patient's words, it can be extrapolated that people from different cultures do not know and do not understand what he needs, because they have different values, or another way of thinking making it difficult to communicate with them or establish a relationship or feeling cared for by them. Diversity must be considered when caring, as different common sense ideas arise from such diversity between patients and nurses and this may have implications in critical decision making affecting safety and quality of care. Nurses must know of and respect any such diversity to be sure of enabling patient adaptation when performing safe, quality care.

Barriers identified from patients' data were a feeling of weakness due to being bed bound and due to inequalities in relationships with professionals, in short by the mere fact of being a patient. Also it was recognised that the lack of patients' knowledge about who is who within professional or occupational groups, a fact specially relevant for the nursing profession because it leads to difficulties in the identification about the benefits or consequences of nurses' work. Patients pointed out the importance of feeling care for by people from their own culture allowing diversity to be categorised as an interaction barrier.

7.6.   Supporting Elements

In this section those elements identified by patients and performed by nurses as supportive elements to patients' adaptation process to HDU admission are considered. The broad sub-categories reported are 'getting the patient involved', 'caring holistically', 'being professional' and 'supporting traits'. The significance of these sub-categories to the process of care and its contribution to caring attributes is highlighted in this section.

7.6.1. Getting the Patient Involved

'Getting the patient involved' in self-care has a direct relationship with good communication; according to the literature it means translating, getting to know you, establishing trust and going the extra mile (Fosbinder, 1994). It is interesting to identify in the following quotation the elements reported in Fosbinder's research about patient perceptions of nursing care. P10 describes how the nurse explained to him the interventions needed to perform a safe blood transfusion which could be recognised as a translating process based on informing, explaining, instructing and teaching.

P10- They ... explained it to me... they said, 'We're going to do a blood transfusion. You've got a very low red blood cell count. We're doing it because... you've lost a lot of blood. We're going to do a...' What's it called? '... a... we're going to take a tiny sample to see if... if it matches the blood we're going to give you'. So they did it, they took the sample... right here in front me, they poured the liquid in and all. Then they said, 'Yes, it's compatible. So, we're going to transfuse you with it. This blood transfusion lasts three... three hours... three hours and a quarter'. And that was it, I was connected up and it's now over ...the bag.

'Getting the patient involved' could have a positive sense of recovery for the patient and may affect safety, according to Fosbinder's notions of getting to know you and establishing trust (Fosbinder, 1994). Following on from the above quotation, the patient considered that he was being properly treated which can be interpreted as being due to the nurse going the extra mile. In this study the patient feels involved because he knows and understands the procedure. Furthermore while the nurse was explaining the procedure, it was reviewed at the same time, step by step as well as other details thus affecting safety and facilitating patient adaptation as was illustrated by P10.

P10- I felt100% safe because I know that … that what they're doing is for my own good. I mean, I'm being treated well…

This finding is consistent with other studies in which receiving comprehensive information becomes a dimension of the clinical experience (Malkin, 2000).

7.6.2. Caring Holistically

A holistic view assumes that the person responds as a unified whole, which is greater than the sum of its parts; people are multidimensional. The concept of the whole includes physiological, psychological, sociological and spiritual dimensions. Holistic care helps the patient to achieve a degree of balance between mind, body, spirit and environment so as to move toward a condition of optimum health (Mason-Whitehead, 2008:169). Our patients' data was consistent with this concept of the whole. In the HDU patients were so critically ill, they recognised that nurses needed to have special training and knowledge to deal with patients' needs and respond to their requests, not solely at a physical level.

P4- So with the patients it's the same... They come in... we come in, in a terrible state, right? Terrible... some worse than others... And, of course, what you want is to be... helped and... well... special treatment... Not normal treatment... it must be special... you know? if you come in... if you come in in a bad state .... And this must... the nurse must know this ... In my opinion, they should have this technical knowledge... you know... psycho... psycho... psychology... or maybe it's called psycho... psychoanalysis, or whatever... It can't be done by a person...

Despite identifying holistic caring as a relevant aspect of nursing care, patient perception was that the nurses do not have enough time to perform holistic care as they only covered the physiological needs but not the psychological, sociological and spiritual needs.

P21- No...yes … But anyway, you can't sit down here and chat with the nurses. They've got things to do, you know what I mean?

Surprisingly, when considering why this happens, patients pointed out that it was because it was not the nurses' job. Only one participant reflected on the other dimensions of holistic care and recognised that it was a nursing competence.

P4- I think, maybe, that it's neither ... not the nurses' fault... Maybe it's the lack of a guideline that might say … 'Hey, look here ... you should also spend time with the patients, and you should ask them how they feel, obviously not physically, but mentally ... if they have a family problem that's troubling them...' I don't know. There are many topics ... starting with trivial things...'Do you have children?' 'Are you married?'... then...'How many...?'... Then… 'Gee, I've got a 12-year-old girl like you. 'There has to be a coming into contact, right? And then you'll be tightening the nut and asking more important and even that bit more difficult questions...

Patients considered that they were prioritised according to physical needs. They do not believe nurses address aspects other than those related to illness or physical aspects. This lack of attention to psychological aspects may be related to lack of time but mainly it is because there is no clear guidance to identify as to how nurses, taking care of them, should act.

7.6.3. Being Professionals

Patients' perceptions about nurses 'being professionals' are revealed as a key supporting element. Professionalism was understood as doing things based on specific professional knowledge, to look after and be caring. When patients are admitted to hospital, nurses are the first contact that the patient has in the hospital and they bridge the gap between patient and doctors. Nonetheless it was difficult to find, save for P8, a clear statement from patients where nurses' professionalism was explicitly stated. Most talked about features that relate to the notion of the nurse as a professional.

P8- Indeed! I can see that... professionally... they don't balk at …at doing things. So, they're okay

Of special significance is what a participant stated in relation to the role of the nurse as a patient advocate. P12 emphasised the importance of the role of nurses in hospital

making it possible for the patient to have contact with physicians; in consequence this patient felt supported by the nurses.

> *P12- …they also get involved in care. And that's very important [...]…It's the first contact that you have with... with... with medicine here, and it's very important for them to be efficient, to see to you, to look after you, to be concerned about you. No money can pay for that [...] Nurses are very important in a hospital. They're an intermediary between one and the other [patient and doctor], totally necessary because...*

Professionalism was related with the way of working, with the focus on patients' needs. This means paying attention during delivery of care.

> *P13-Yes indeed... they're very... they're... they're more than great, they're more than hard-working, they really care for you... you can't blame… Nothing... you can't say anything, because there's nothing to say. And if someone said... if anyone says... that's not…[...] Well, that no, that's not being a nurse, and that's it... You have to be everything. You have to be nice, pleasant...*
>
> *P14- ... So, one straightens you up one way... then another comes... and straightens you up another way... then another comes... 'But who on earth did this?' And straightens you up yet another way...*

The study found that patients compared nurses between each other and besides positive professional dimensions it was possible to identify what was considered unprofessional, in short negative dimensions. Usually, these negative dimensions were associated with nurses' attitudes while caring such as P20 and P21 commented.

> *P20- No, no... Not all the nurses feel the profession the same way as others. They don't live the profession. As a patient I notice it more than anyone, if someone is really doing their ... their job, and someone else is simply putting in the hours as fast as possible… a patient notices these things straight off*
>
> *P21 - Yes. Others go more just to have the work and ... obviously, they aren't interested in the patient's life. It's not important [...]… I understand that yes, there are a lot of professional people here... I think there are very professional nurses. And they are very well coordinated and do their job so well. And that person, well, she was a bit lost. I think maybe we should... let's say, help the staff who might have less experience in the Unit, to avoid [sic], specially depending on the person's personality, right? Because, there are some people who are far more assertive than others, right?*

Within professionalism, accountability is a key feature which according to Thomas (Mason-Whitehead, 2008:9) refers to being responsible for certain activities and someone who has to provide rationales for these activities to those in authority so that both the actions and the reason behind them can be judged. Professional accountability influences patients' safety and outcomes as clearly reported by P4.

> *P4- I work in statistics, at the National Institute of Statistics, and when there is a failure or whatever, it happens... it's corrected, but here there's a failure and… it happens to one, and it leaves a family distraught, you know what I mean? They have to know... that it's not a normal job, because it's not a normal job... It's a hugely important job, so they have to pay more attention, you know? Well, that's what I think...*

Not all nurses exhibited the same degree of accountability and this bothers and angered the patient because he considered that the nurse must be accountable and aware as the consequences of bad practice can be life-threatening, or if not then serious implications.

7.6.4. Supporting Traits

Humour was identified as one of the main desirable traits to support patient adaptation; it was important for patient because humour make things easy. Most of the patients stated that humour was very important to them as it improved their wellbeing (P17, P18, P19 and P7) and modified their perspective (P17, P7 and 10).

P17- You get to spend a little while … a bit more... more... enjoyable and pleasant
P18- ... like we say ... a smile, a face …that's pleasant, right? You said it, this is what you see first each day..
P7- Sure, they often laugh, that's normal, eh? Because that's normal too ... it also cheers you up… they're having a good time, right?
P10- For a patient, for a patient, if there isn't a bit of humour, bloody hell, because it cheers you up, right? As I said earlier, I have no complaints

As a consequence of improving wellbeing and modifying the patient's perspective, patient adaptation was facilitated because they felt protected, supported and confident (P16). Humour was considered a key and important nurse trait (P21).

P19- For me a sense of humour ... it's the best... the greatest thing…
P16- It sure is important. You see a... a doctor or a nurse smiling... you ... you feel protected, relieved, trusting ... But you're a serious person, I mean, you say nothing and keep quiet, right? Because this happens in the geriatric clinic where I work... Some people have strong personalities, and the people... the people who work... who work... we who work for them, feel inhibited and... and they say …right? … they .... at least, when they see me, they laugh... 'She's here, she's arrived'. I always stop to have a laugh, doing my job...
P21- There are some, yes, with a sense of humour, indeed. The truth is, it's important. It's quite important

According to Struthers (2008:299), '*a sense of humour is unique to each person, and it can be beneficial and harmful depending on how it is sent and received'*. Despite these considerations, a sense of humour was seen as a valuable attribute in delivering healthcare as highlighted in the above quotations.

'Supportive traits' included the nurse's age as participants noted the influence of age on the patient's perception of the professionalism of nurses. P4 compared younger with older nurses and indicated that the job of the young is lighter suggesting that she is 'less' professional; he suggests a relationship between age and nurse experience, and thus her ability to be a 'fully' professional nurse.

P4- No... It's the person... it's born in the person. Yes. No, because there are some younger girls... there are younger ones who aren't very... very settled yet, right? They do their job but not in such a dedicated way, but they do it … but they're young…

However, P2 recognises nurses and considers their function to be very hard for younger people, indicating that their choice can only be explained because these nurses have a vocation.

P2- … I've never been hospitalised before, but there are wonderful people. Excellent young people because they ... they do it because they like the job... because otherwise, it couldn't be done.

It was also possible to identify that nursing was more than a job and the ambivalence between the importance of age meaning experience but at the same time, the fondness of young nurses for nursing.

'Supporting elements' provide a key to trigger and help patients through their adaptation process to HDU admission. The broad sub-categories reported were 'getting the patient involved', 'caring holistically', and 'being professional 'and 'supporting traits'. 'Getting the patient involved' could have a positive sense of recovery for the patient and may affect safety, primarily through the trust generated between nurse and patient. 'Caring holistically' assumes that the person responds as a unified whole, which is greater than the sum of its parts, people are multidimensional; the patients' data was consistent with this concept of wholeness. Patients' perceptions about nurses professionalism was understood as doing things based on specific professional knowledge, to look after and being caring. Professionalism was related with the way of working, with the focus on patients' needs. Humour and nurses age were identified as one of the main desirable traits to support patient adaptation.

7.7.   Feelings About Care

A 'feelings about care' category was constructed in relation to patients' expression about their health experience and needs in the HDU focusing on the consequences of nursing care. Four sub-categories of 'feelings about care' were identified, 'dealing with', 'lacking coordination', 'being aware' and 'caring time'.

7.7.1. Dealing With

The main issue in 'dealing with' were patients' incidents during their admission to HDU. This category reveals that according to how patients deal with an incident that occurs during admission, adaptation to HDU is promoted or prevent. Two patients had incidents involving communication and relationships which revealed that the admission was important in 'feelings about care' because depending how the admission process was conducted and on the patient's ability to manage and deal with it, it can generate a situation that involves a state of crisis that leads the patient to express feelings such as being ignored, loneliness, fear and the feeling of being at risk. The following quotations reveal those issues. P2 described an uncomfortable situation after her admission and how the uncaring response she experienced, caused her to become anxious and agitated implying a state of crisis.

P2- I asked them to just come and fix my bed and no... nobody came... they only came to tell me be quiet ... Yes... not to shout that there were sick people there... OK. I only asked 'Please help me'. But I .. I wasn't asking for anything else. What I wanted...She came of course, and … and the way she left the bed I couldn't sleep that night...

Another patient, P21, made a request during her admission procedure that was ignored. Consequently to avoid a bad experience she became inhibited and decided not to pursue the request.

P21–'My doctor is so and so. Please let him know I'm here'. I didn't insist, though, it was as if … 'Why tell me? I'm not going to call anybody'.

Both incidents constitute examples of a bad patient experience. Nonetheless it is of value to note that what make the differences was patients' response to this bad experience. The first lady (P2) required medication and physical restraints to reduce the risk of a fall due to her response. Furthermore the nurse in the shift following after the incident needed to pay more attention when delivering care as the patient's needs had altered as she felt really sad. The second lady (P21) was a young lady and although when she was admitted with a fever and was feeling really unwell, it is possible to interpret clearly from the interview, that she had enough adaptation mechanisms to overcome the situation and to avoid becoming upset. The next quotation reflects her feelings after realising that the nurse in charge during the admission process will not call her physician.

P21- You say, 'Oh, never mind' It hardly matters, really. You are here to be cured... and that's it.

In was not until the third day following admission that the physician in charge of the patient because of her chronic illness was aware that she had been admitted to the HDU and he visited her.

7.7.2. Lacking Coordination

Care coordination can be considered very closely related to teamwork, communications and relationships established between healthcare team members. Furthermore according to the patient data, other variables influenced care coordination, some of which are reflected in the following patients' quotations which identify missing care.

The surgeon visited P11 to review her surgical wound. However because she had an abdominal corset in place this review was omitted although she explained that the corset was very easy to remove.

P11- I say, 'But, hey, this can be taken off now'... He says, 'No, no... I'll come back another time'... 'So tomorrow I'll tell them not to put the corset on, so I'll be ready when you come'…I say... 'You can see it's very easy... it's very easy to take off'...

This situation could have been avoided if it was possible to coordinate the surgeon's visit with the nurse's wound care. Lack of coordination was also recognised when the process of care occurs in and out of the HDU. In the following quotation the situation is described where a patient was taken to radiology to have a chest X-ray. Once this was completed he had to wait to be moved back to the HDU. This patient had had a previous bad experience when scheduled investigations were cancelled or delayed.

P6 -'These things happen, right? Eh... What bothers me is ... the lack of coordination.... the lack of ... I mean, as one example... the ... the last thing that happened was that I had a test.... I had to have a test for [...]...I went the whole night without being able to drink water or anything... so it was... It was cancelled at 10.30 in the morning. Yesterday... yesterday again... Today I'm there again... It's at 8.15, and it was 10... I... I complained... I complained, right? Because I'm someone who believes that they're dealing with people, and they need to be a little more considerate. And not everyone is so considerate ... you understand? I mean, there's... I find that there is staff that ... a certain proportion is good... they have experience, and... then there are many people ... many people who don't want to work... that's why we are ... what society is like what it is today, huh? I mean... I think it's organised well and functions and so... but people let it down... people... not in the way they treat people, but, I don't know why.... because they don't go the extra mile, because... this morning, when they did the x-ray... I left here at 8.25.... I was back at 10.30. Look.... well.... one of the things which made me complain is that... well, I had ... the... ultrasound... In this case I had... I had my turn... I'd have to wait... I know that. I accept that even if I don't like it, but I accept it because we are... everyone... it's all a mess ... So they're short of people or whatever... eh.... What doesn't seem right to me is that once it's done, they move you from one place to another, it'd be just a matters of seconds ... They have you sitting there waiting for 40 minutes, with an empty stomach... so...And so... do you see what I mean?

Patients show frustration, feelings of lack of control or anger, when facing situations where there is a lack of coordination. Although not explicitly stated by the patients, this lack of coordination is related with missed nursing care which may had safety implications and influenced the evolution and therefore patients' outcomes. This finding is supported by the work of Kalisch (2003; Kalisch & Lee, 2009) who explored and proposed the concept of 'missed nursing care', to help to understand the demonstrated association between nursing staff and patient outcomes.

7.7.3. Being Aware

This section presents patients perceptions about nurses 'being aware' of their needs. 'Being aware' allows nurses to anticipate patient needs and problems and avoid or diminish complications; 'being aware' implies timely responses as reported in section 7.4.1 (Safety elements) when P12 reported that as a consequence of ringing the bell, the nurse came into patient's room. The following quotation describes how nurses act which reflects that this nurse was aware about possible patient complications and intervened accordingly and this was recognised by the patient.

P12- [The nurse] came... immediately she felt under my armpit, touched me every where, and that means she knows what she's doing. And that she'd come across another similar case before, right? ...But they go off looking for another [physician] ...to solve the problem... No, [nurses] are also involved in

care… And that's very important

'Being aware' is linked with a nurse's expertise that allows anticipation of a potential risk situation. As reflected in P12's quotation, communication with the patient during the acute situation merges jointly with the nurses' expertise as a key point to ensuring process safety and better patient outcomes.

A rapid response is also identified in the next quotations in relation to HDU admission when due to the patient's status, timely interventions were needed and the patient perceived this response as being aware. Patients compared their HDU admission with their admission experience in other hospitals.

P21- To be honest, I was seen to very quickly. Everyone who was here... they did all I needed for this Unit and given my situation. I mean, they acted pretty quickly

P10- 'Here, I've got it.' They come right away. Unlike other hospitals… you ring it and, well, maybe it takes them 10 hours. No, no. Here you ring, and it takes them 2 minutes at the most, eh? At the most. And as I said, very good, very good. In all aspects…

Other feelings related with 'being aware' are when patients needs were addressed and how they were addressed (P17), furthermore feeling protected (P8) and treated as a person (P11, P15).

P17- 'Ha-ha... Well, of course, the first two days I was here, too... to get up and so on ... According to the doctors I wasn't up to it ... but the fact of having to ... be washed in ... in bed... That's something I don't much like. For so many years I've been doing... I've been managing by myself so, you know, I felt a bit inhibited, you know? I even asked them, 'Hey! I'm sorry... I don't know...''Don't worry, it's my job' ... I say ,'Ok, but...'

P8-'Well, properly caring for and looking after patients, whether they have to be washed or tidied up or if they have to.... it's ... it's ... fundamental also, right? I think so ... this is important. What a patient needs is... naturally, to be ... to be properly cared for, right? They need they need that ... because when you're sick it's rotten, you can't do anything. You're... you're a.... You're nobody'

P11- To me it's important this being looked after... taken care as a patient you are a person who needs help... from the others. That's most important to me'…' They cleanse me, but very neatly... but really well'

P15- …And the nurses have a lot ... a lot to do with me finding it more comfortable for ... They are really nice, as I said before, very helpful ...

'Being aware' allows patients to feel more comfortable; furthermore it is related to the nurses' presence (P15). Based on the previous quotations, it allows prompt detection of complications, avoids these getting worse and helps patients deal with this new situation. Therefore adaptation processes were ongoing further affecting patients' outcomes and safety. Reasons given by participants indicate that being aware could be considered as a main ingredient for patient safety. When patients' needs were addressed, patients feel safe mainly due to the nurses being aware of the need to perform timely and proper interventions.

Opposed to this are those times when the patient relates the situation where the nurse is not aware as it is noted below. Although it is only one patient that reports feeling that their pain is not under control, it is important to consider because of the implications this could have on patient experience of illness as well as on safety and outcomes.

P14- Not automatically. First because they do not give...No, automatically, no. They wait for a... Let's see, if I have a lot of pain and a temperature and I am in pain, I do ask for it. But ... but if I feel some discomfort or something, it's not given automatically...

In this situation the patient makes an important contribution by distinguishing between having a lot of pain and having discomfort. This could be interpreted as the patient's lack of knowledge of the importance of trying to control pain before it becomes severe, as straightforward pain control is an important aspect of the process of care to assure patient comfort. Delay in treating pain was considered a negative dimension of 'being aware'. Although it may be that the nurse had informed the patient about the importance of controlling the pain before it becomes severe, an adequate assessment could avoid this delay in treatment. Moreover such a delay may be due to limitations in treating pain based on inadequate prescribing of analgesia with the consequent impotence that this gives the nurse. This is possible to overcome with good nurse physician communication.

7.7.4. Caring Time

'Feelings about care' were also a matter of time. Patients refer to time expended in care by nurses; the care process was sometimes experienced as rushed. Patients justified this rush due to nurses' workload and the high number of patients needing care.

P3- Because maybe they have other patients and ... and they have work to do. I say ... I say that it's like that, because otherwise ... They say,' As soon as we finish, we go to another and so on ... to another' ... They go ... go through ... fast. When they finish with me, they go to someone else, right? [...] Get fast, finish as fast as ...fly, fly .... As soon as we are washed and dried ... there!! Flying, they fly through

It was evident that more important than the length of caring time is how nurses related to patients which helped them to feel more comfortable. However the feeling that nurses are in a rush limited the patient's opportunity to communicate with them.

P3- Sure, because they are in a rush ... in a rush and you're not going to force them into a conversation... as I was saying to my cousin the other day and so on. I see them in a... the girls are there to do their job not to listen to the patient neither ... or...

P12- Their job, it's just a minute: they see to you and they have to move on ... It's not chatting time. It'd be different if we were there at the bar having a... a beer, right? It's another thing all together

Another dimension was how caring time was used. Although nurses were considered to be rushed, patients experienced care as under control due to effective use of caring time by nurses.

P5- Wow! I've been checked every night and every day, every half hour or every hour... they have to give me so many injections and so many things ... So, in my case they do have to come a lot. They've all been very good and everything is really fine

P8- The nurses are... are... very considerate... are very considerate.... very much so. They're who... who spend the most time with patients… the nurses... spend more time than.... spend much more time… As well, while they're doing things, you're talking to them…

Within these dimensions it can be understood that patients had a good caring experience. It also points out that while nurses are talking they are doing interventions at the same time which seems to shows that the act of speaking per se is considered a waste of time if no other interventions are done at the same time.

P14- Yes and no. Let's see, there are things that yes and things that ... There are things they don't say or if they are very busy.... all that. And that's understandable ... You see, you're a patient, but you're not the only patient, there are 50 patients here. So I understand perfectly. But it's the way they could come and say, eh.... 'How are you, X?' and say it with a smile, and all that makes you feel a bit more comfortable. And more so in a place where visiting is very, very short... Let's face it ... it's boring.

The importance of caring is clearly reflected. Nevertheless the patients' difficulty in explicitly articulating the role of nurses in their caring experiences was also identified.

7.8.   Consequence of Being Cared For

'Consequence of being cared for' emerged as the subcategory that most reflected the consequences of nurses' interventions. It is reasonable to suggest that all categories are interrelated as presented in the summary section at the end of the Chapter. However it is important to draw attention to 'feeling comfortable' and 'feeling safe', both sub-categories from 'consequence of being cared for', because in contrast to preceding sub-categories, somehow they are the earlier step which brings together all the elements used to build the core category.

7.8.1. Feeling Comfortable

Comfort is mainly related to the components of good care and to have addressed the basic needs. Patients consider the quality of care important, to feel care, to know that someone was paying attention to their needs and to receive affection. In this category analysis, it is possible to find some commonalities with the 'being aware' category. Under the shade of these commonalities, the differences considered are those that arise in feeling comfortable connected with the experience of care. The following quotations suggested that kindness help patients' to felt calm which has been identified by Kolcaba (2003:15) as a dimension of comfort. Feeling comfortable requires that the patient feels that the nurse pays attention to her as P4 describes.

P4- It's that kindness is very important, being in here [...] indeed, like a little pill that relieves the pain a bit. Because if you run into, as I say, nurses who are bitches, who ... who give you the lash... well, that's not right, is it?

In the same way P20 indicated that the nurse being present is an essential element to feel cared for and comfortable.

P20-... care is very... for the patient it's very important ... to feel good and well cared for. You spend many hours alone and have time to think... And then, positive care from the... nurse, from nurses in general... or healthcare staff is really important for the patient

Moreover P12's identification of nurses' values when describing caring, provides information about the congruence between participant and nurse beliefs, principles and standards which also included an emotional element.

P12- ... caring for you with respect, with kindness, with courtesy. All those things... a person must have them. You can't treat a person who's ill, as they say, 'like a dog', eh? No way. It must be... with kindness. And these youngsters have a lot of work to, eh?

Within feeling comfortable, several dimensions of comfort are represented such us those defined by Kolcaba, physical, psycho-spiritual, environmental and sociocultural (Kolcaba, 2003:42).

P18- Actually, when you are admitted to hospital, if the care is good and people are good, other things are quite... secondary. At least for me. If the facilities were... They're very nice, but if they weren't so good, and people were just as good and nice, I'd be just as happy

P9- I say, 'Sorry, my dear'.. the one that did not get scared I say, 'Sorry, my dear'... She says, 'Not...' She says, 'I'm sorry for you, not for me. Because for me, look, my white coat has gotten stained, but it can be washed'.

Comfort was considered not only a consequence of interventions related with physical needs but also to include those aspects that promote overall patient wellbeing as shown in the next quotation.

P4- 'Cheering you up is also important. Not only that they clean your bottom ... because... and you know. Cheering you up and saying, 'How did you sleep?'... 'Are you in pain?'... You know what I mean? 'Is your family coming today?'... Things like that. Little things mean a lot, you know?

P4 stated that encouragement is significant during care; according to evidence factors such as encouragement are considered to produce comfort (Kolcaba, 1991). However as Kolcaba demonstrated comfort has many different meanings, such as a cause of relief from discomfort and /or the state of comfort, the state of ease and peaceful contentment, relief from discomfort, whatever makes life easy or pleasurable and strengthening, encouragement, incitement, succour and support (Kolcaba, 1991). Many of these meanings appeared in the patients' data. In the following quotations patients referred to nurses as helping to relieve discomfort (P5), to give peaceful contentment (P10) and to make life easy or pleasurable (P19).

P5- Wow! She has just ... she's looked for a lying position for me ... and if I ask her to help me find another lying position, that...

P10- ...calm... they relax me. Because when I came in... I... nervous.... my nerves ... my heart was going boom-boom-boom

P19- First of all, not telling me about what was happening then, instead, just talking about the blue [parking] zone or the green [parking] zone... Taking me out of my... of the problem I was just then, take me outside of myself. Mentally... when you're ill, what... you are... focusing on what you've got, making it worse... And what... he did... consciously or unconsciously was to tell me anything to take me out... 'The blue zone... if we're to be charged so many taxes, I'll come on a motorbike...' And like it or not, this calms you down.... why? Because you're not thinking 'I've got a problem', but that you're being helped with ... with the fact... you're taken out of yourself ... you're calm, because your mind is... ummm.... flying outside, you know what I mean? And that gives you peace of mind.

Nurse interventions described by participant P19, highlight the importance of little things while caring; the nurse talking with the patient shifts his worries about his current situation by talking about something else resulting in decreased anxiety.

Discomfort was the consequence of a negative caring experience. As presented in section 7.7.1. 'dealing with', P2 experienced an unresolved situation of discomfort immediately after HDU admission and her situation and condition got worse. Although previously described the whole quotation is reproduced here because it helps to illustrate a clear discomforting experience and how at that point because of the nurse patient interaction the situation got worse threatening her health status.

P2- ... and a cushion for my feet. She took the sheet and left it like this, but she didn't...what I wanted here at the bed head...because they always make you comfortable...if you want it higher or lower. And yesterday she left and didn't say anything. I thought, well, she's gone because she had something to do, and she had taken the doctor's folder...this table here was over there and she said 'Now I'll go call our doctor'...because as far as she was concerned, the way she left me in bed, it was perfect'[...]... I only wanted to have the bed straightened ... but this ... for this nurse, meaning ... 'Oh! What more do you want?' I was left ... I could not believe it [...]...Oh... it was that, for her, the bed was already well straightened out [...]... and so I was to keep quiet, that there were sick people around, meaning they were already resting, and I say 'I'm also sick and I'm defenceless'

Different comfort dimensions were constructed from patients' data allowing comprehension of the richness of this term as supported by previous studies (Kolcaba, 1991; Kolcaba & Wykle, 1997; Kolcaba & Wilson, 2002; Kolcaba, 2003; Kolcaba et al., 2006).

7.8.2. Feeling Safe

Findings suggest that 'feeling safe' derives from nurses' interventions that allow patients to gain information in relation to patient treatment (P7) or a nurse intervention (P22).

P7- …when they inserted the IV they told me that ... […] 'We have to insert an IV now because…' […]… They explained what I already knew, but well, she was very kind to... say, 'Now we'll do this'

P22- Well, exactly that... that they come and talk to you and tell you, 'Now don't you worry... don't you worry...' It's that... that the nurse who says... 'Don't you worry. I'll fix it, I'll clean you... I'll do this... here are your tablets'. And she explains all this to me. And you see that she knows what she's doing. You know that there's no need to say anything... she knows...[...] Some people inspire you with confidence... and others don't ... There are nurses and you say, 'Hey, I'm relaxed and I can sleep easily because this person really knows what I have, you know? Really feel everything that happens to me'... But sometimes you say... then you're left like this …

In these caring encounters, the nurse gains the patient's trust by demonstrating what she knows about her, which inspires the patient to feel safe. For P22, the value of the safety statement is higher because this patient needs special attention due to their specific patient situation, i.e. lying in bed completely immobilised for the last six months and with a tracheotomy that allowed connecting patient to a ventilator support at night. A completely opposite situation is recorded from the same patient. This patient highlighted the role of delivering high quality information in relation to care, how this had increased and gained the patient's trust; by implication, when trust is not achieved nurse interventions may be perceived as a threat. Relatives emerged as a solid support to guarantee safety for these chronic and long term patients.

P22- Of course, because I know what that person knows, but when she comes and says, 'Oops! This and that and so and so', then you're left stunned... My goodness ... you're left speechless. You say, 'And this is the person who's going to look after me tonight? 'And you are left wondering ... that's why, I mean... there are little things you see that make you say, 'Is this possible? 'But, never mind, that's how it is. [...] Of course! I feel safe when my husband's here. Then I feel really safe ... Yes, yes, because, as I said, he's been doing this with me for 6 months ... He helps me all he can... He's not the typical visitor who comes to see you and that's it. And often other things that [...] I know there are rules in the hospital, right? There are some rules. And at the beginning ... Here there's a timetable, right? It's from 1 to 2, from 7 to 8 and from 10 to 11... And then my husband, he's here alone... He's staying in a ... one of those houses that rents rooms [...] he went out at 8, until it was 10... He stayed out there waiting, and I said, 'My God... they should...'

Keeping contact with the patient when acutely ill was identified as a patient safety intervention.

P23- Yes, because... as I told you.... because many times I didn't call them, because... As I said... I... I think that what … what happened to me, it was the drugs; you're half drugged all day, right? And I didn't know where the bell knob was... Later I found out I had it... just a few inches from my nose, as well... But... but they came in... but often, both the chap and the... They came not even to … to … to … take a blood sample ... They came just to say, 'How are you X? Are you better? Look, I'm off home'… For me this was important. Hell! I can't be with my wife... and I'm here alone... sprawled there, with my pants down, and all my parts in view … and... and there was everyone... I wasn't aware of anything... and even one person comes in, says hello to you... Wouldn't… wouldn't you appreciate that?

The same situation occurs with P7; he described how he felt safe because of the nurses' interventions when his health status deteriorated.

P7- Goodness! I felt safe because I saw that they came right away, they took hold of like this ... one told me to breathe... Sure, I got this thing... I hadn't been told anything, right? And... And I start... started coughing, again and again, coughing because I hadn't vomited anything, but apparently she immediately told me 'No, no... Breathe deeply, breathe deeply, breathe deeply'. And when I breathed deeply it seemed like that coughing stopped, right? [...]Yes, yes, yes. The two who were there, who'd explained it all, right? 'Don't worry, don't worry, this will pass in no time ... You'll see how it'll be gone in no time'. And that's what happened

How patients experienced the information received contributed to patient feeling safe. Literature reported the influences of lack of information on patients' fear and anxiety (Walker et al., 1998). Moreover it has also been documented that receiving comprehensive information was helpful to relieve anxiety (Malkin, 2000). From the

patients data, it become apparent that patients feeling of safe were related with information provided by nurses and, furthermore, feelings of trust and confidence feelings arising from the relationship established between the patient and the nurses.

7.9. Chapter Summary

The core category emerging from the patients' data was 'adapting to HDU admission'. Adaptation reflects biopsychosocial behaviour occurring within a persons' individually defined range of usual behaviour (Mishel, 1988b); an adaptation process implies change, whereby the individual retains his integrity within the realities of his internal and external environment (Marriner, 2006:229). From the study data, and considering the above framework it was possible to identify, in the main five categories, aspects of nursing care that promote or prevent 'adapting to HDU admission'. The core category was constructed considering those attributes of nurses that influence the process of care and as a consequence may have an influence on patient outcomes and safety throughout the adaptation process contained in these five interrelated main categories: 'perceiving the environment' (structure component), interacting with professionals and relatives (process component), 'supporting elements' (process component), 'feelings about care' (outcome component) and 'consequences of being care for' (outcomes component). The items in brackets indicate which component of Donabedian's framework (Donabedian, 1966) applied to each subcategory. Figure 7.2, presents the full, final integrative diagram composed of the core category in the middle surrounding by its categories and sub-categories.

How patients were 'perceiving the environment' emerged as a category being frequently related with patient adaptation to the HDU. The care environment was often unknown to the patient; in addition to changes in health status and its implications, the patient was in an unfamiliar environment initiating a process of adaptation that can be conscious or unconscious irrespective of the fact of being concerned about a new health situation. Within 'perceiving the environment', two main sub-categories emerged: 'safety elements' and 'discomforting elements'. 'Safety elements' implied control over the situation and nurse's presence at the bedside. 'Discomforting elements' as expressed by patients may affect patients' outcomes and safety because of their implications for comfort thereby limiting patient adaptation capacity.

The adaptation course that patients take in the HDU was affected by 'being concerned about relatives'; this subcategory involved the sort of experiences that ranged from feelings of safety to feelings of guilt in relation to their relatives. Relatives support was identified as being huge and could range from constituting an important physical and emotional support for the patient or a guarantee of comfort to a source of anxiety which may modify the patient's adaptation capacity. However, if many relatives were present this was considered to prevent nurses care processes and could affect patient safety. The 'recognising teamwork' concept emerged as a way to describe patients' interactions and experiences with nurses; it was revealed as an important element of feeling care, safety and trust. These elements have been identified as promoting the adaptation process. Interestingly elements such as feeling vulnerable with respect to power relationships with health professionals and the mere fact of being a patient were reported as preventing elements. These sub-categories were grouped as 'interacting with relatives and professionals' category which along with 'perceiving the environment' constitutes the base of the rest of the categories.
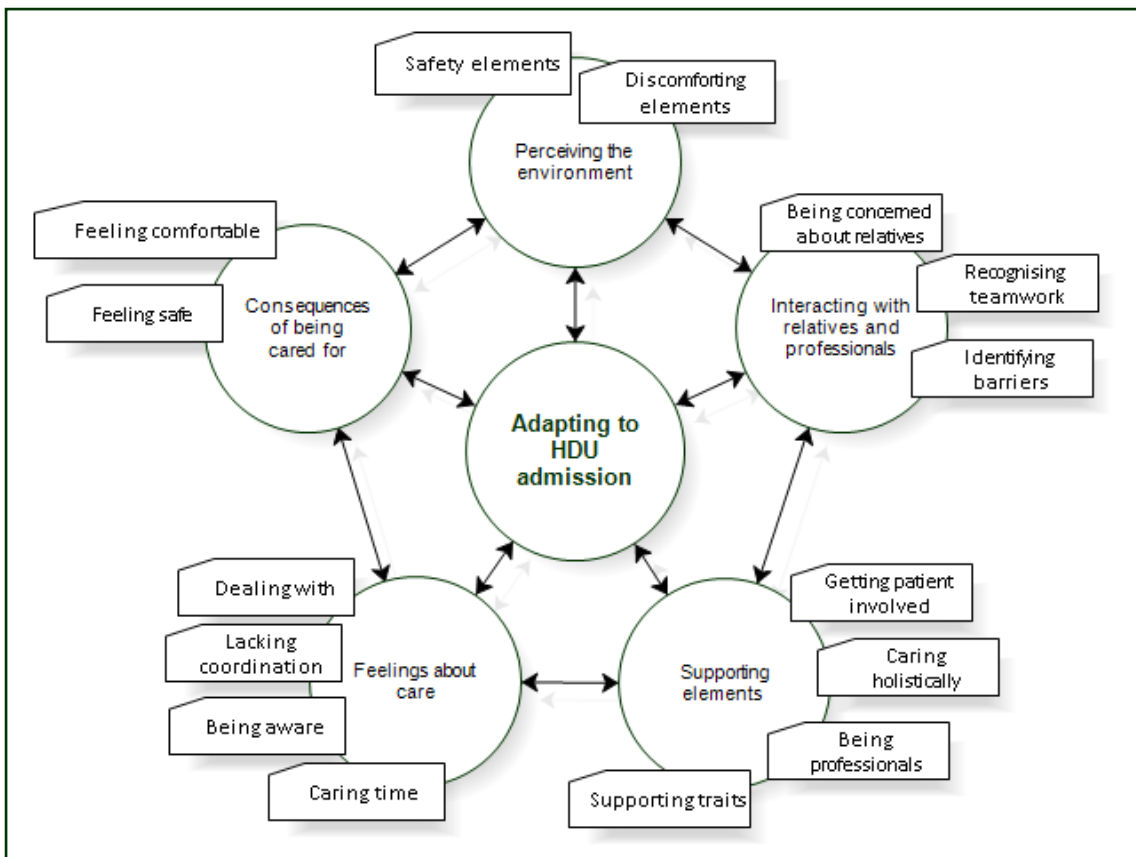
Figure 7.2: Final Integrative Diagram with Sub-categories

'Supporting elements' is revealed as important to trigger and maintain patients in their adaptation process to HDU admission. 'Getting the patient involved' could lead to a positive sense of recovery for the patient and may affect safety, primarily through the trust generated between nurse and patient. 'Caring holistically' assumed that the person responds as a unified whole, which is greater than the sum of its parts, as people are multidimensional; the patients' data was consistent with this concept of wholeness. Although caring holistically was identified as a relevant aspect of nursing care, the patient perception was that nurses do not have enough time to perform holistic care; they only covered the physiological needs but not the psychological, sociological and spiritual needs. Patients' perceptions about nurses' professionalism was understood as doing things based on specific professional knowledge, to look after and be caring. Professionalism was related with the way of working, with the focus on patients needs. This means paying attention throughout the delivery of care. Negative dimensions were associated with nurses' attitudes while caring and the lack of accountability. It was clearly revealed that professional accountability influences patients' safety and outcomes. Regardless of previously recognised professional elements, humour and nursing experience were identified as two of the main desirable traits to support patient adaptation. As a consequence of humour, wellbeing and patient perspective improved; patient adaptation was facilitated because they felt protected, supported and felt confidence.

'Feelings about care' was constructed in relation to patients' articulation about their health experience and needs in the HDU focusing on the consequences of nursing care. The main issue to 'dealing with' were patient incidents during their admission to HDU which constituted a bad patient experience. Again when considering 'lacking coordination' it was observed that it was very closely related with poorer teamwork and weaker communications and relationships established between healthcare team members. 'Being aware' allowed nurses to anticipate patient needs and problems and avoid or diminish complications; when patients' needs were addressed, patients feel safe mainly due to nurses 'being aware' to perform timely and proper interventions. 'Feelings about care' were also a matter of time. Patients referred to time expended in care by nurses; the care process was sometimes experienced as though nurses were in a rush. Patients justified the nurses' rush due to workload and the high number of patients to be cared for. It was clear that more important than the length of caring time is how nurses related to patients which helped them to feel more comfortable. However the feeling that nurses are in a rush limited the patient's opportunity to communicate with them. Another dimension was how

caring time was used. From these dimensions it could be understood that patients had a good caring experience; therefore this reflected the importance of the caring moment.

'Consequences of being cared for' emerged as the subcategory that most reflected the consequences of nurses' interventions. 'Feeling comfortable' and 'feeling safe' constituted the earlier step which brings together all the elements used to build the core category. Comfort was mainly related to the components of good care and to have covered the basic needs; furthermore to be a consequence of interventions related with physical needs it also included those aspects that promote overall patient wellbeing. Different dimensions of comfort were identified such as encouragement, help to relieve discomfort, a peaceful contentment or intervention that makes life easy or pleasurable. Discomfort was the consequence of a negative caring experience. Findings suggested that 'feeling safe' derived from nurses' interventions that allow patients to gain information in relation to their treatment or a specific nurse intervention generating a feeling of trust. Relatives appeared as a solid support to guarantee safety for chronic and long term patients. The importance for patients of nurses experienced in giving information, contributed to patients feeling safe. Literature reported the influences of lack of information on fear and anxiety (Walker et al., 1998), it has also been documented that receiving comprehensive information was helpful to relieve anxiety (Malkin, 2000). From the patients' findings it became apparent that patients' feeling safe was related to information provided by nurses furthering trust and feelings of confidence.

Adapting to HDU admission, triggers nurses' level of consciousness about patients needs to promote safe care with the aim to improve patient outcomes. The adaptation process was based on patient comfort as starting point of this new challenging situation for patients.

8.1. Introduction

This Chapter presents the findings from the nurses' data of the exploratory interview study. The aim was to develop a theory to explain what aspects of nursing care influence patient outcomes and safety and what is perceived as an outcome of nursing in a HDU from the nurses' perspective. Grounded Theory methodology was used to analyse data obtained from focus groups and in-depth interviews with nurses, as described in Chapter Five.

Before presenting the findings, section 8.2 provides the focus groups participants' profile and, section 8.3, the focus group characteristics and topics treated in each focus group. Starting from section 8.4 findings are presented, led by the core category 'enabling patient comfort', and followed by the main categories associated with the core, 'adapting to the context' (section 8.5), 'facilitating strategies' (section 8.6), 'powering elements' (section 8.7) and 'making sense of the outcomes' (section 8.8). The dimensions of these categories and their relationships to the core category are explored. Direct quotations are included in each theme to assist in illustrating the emergent theory. The original language versions of the direct quotations, either in Catalan or Spanish, presented in this Chapter can be found in Appendix A in the order reported in this Chapter. As stated in Chapter Five, a code has been assigned to each participant to ensure anonymity and confidentiality of data. Participants' codes were created with the letters 'MS, AS, NS', denoting the work shift (morning, afternoon and night respectively), followed by a number (MS1 indicates participant 1 from morning shift). The nurses who were interviewed are represented by 'NI' (nurse in-depth interview) and the corresponding interview number. The final part of the Chapter, section 8.9, summarizes the key findings from the nurses' data.

8.2. Participants' Profile

The sample consisted of nineteen registered nurses (RN) and three auxiliary nurses (AN). RNs and ANs from the same shift were involved in the same focus group with one AN participating in each. Table 8.1 presents the participants' demographic and professional data with the cumulative data at the top and the shift details below.

Table 8.1: Participants Demographic and Professional Data

Participant	Participant Identification	Registered Nurse Nurse Aids	Age	Gender (Female / Male)	Permanent Temporary	Masters (Yes/No)	Professional experience (hospital)	Professional experience (HDU)	Quality of care perception	Autonomy perception	Needlestick Injuries (Yes/No)
22		19RN /3NA	41±11*	91%F 20F/ 2M	73%P 16P/ 6T	68%Y 13Y/ 8N	17±9	7±4	7±1	7±2	18%Y 4Y/ 16N
MORNING SHIFT											
1	MS1	RN	42	F	P	Y	20	11	8	8	N
2	MS2	RN	53	F	P	Y	25	11	7	9	N
3	MS3	RN	31	F	P	Y	10	2	7	7	N
4	MS4	RN	44	F	P	N	23	3	6	6	Y
5	MS5	RN	21	F	T	Y	5	5m	9	7	N
6	MS6	RN	47	F	P	Y	21	11	6	4	Y
7	MS7	NA	46	F	T	N	4	3	8	6	N
8	MS8	RN	33	F	T	Y	8	6	7	4	N
9	MS9	RN	55	F	P	T	30	11	7	7	N
9		8RN/ 1NA	41±11*	9F	6P/ 3T	8Y/ 6N	16±10	7±4	7±1	6±2	2Y/ 7N
AFTERNOON SHIFT											
1	AS1	RN	38	M	P	Y	14	3	7	6	Y
2	AS2	RN	43	M	P	Y	20	10	8	6	N
3	AS3	RN	28	M	T	N	<1	<1	8	8	N
4	AS4	RN	29	M	P	N	8	8	7	6	Y
5	AS5	NA	46	M	P	N	18	4	8	10	N
6	AS6	RN	23	F	T	Y	1	1	7	5	N
7	AS7	RN	32	M	P	Y	10	10	8	7	N
7		6RN/ 1NA	34±8*	6F/ 1M	5P/ 2T	4Y/ 3N	12±7	6±4	8±1	7±2	7N
NIGHT SHIFT											
1	NS1	RN	48	F	P	Y	27	12	6	5	Y
2	NS2	NA	55	F	P	N	29	2	8,5	9	N
3	NS3	RN	32	F	T	N	8	8	7	7	Y
4	NS4	RN	55	F	P	N	19	8	8	6	N
5	NS5	RN	51	M	P	Y	29	10	8,5	9	N
6	NS6	RN	46	F	P	Y	19	10	8	5	N
6		5RN/ 1NA	48±9*	5F/ 1M	5P/ 1T	3Y/ 3N	22±8	8±3	8±1	7±2	2Y/ 4N

* mean ± standard deviation

Ages ranged between 21 to 55 years old with a mean of 41 years. 91% of participants were females, 73% have a permanent contract with the hospital. In relation to educational level, 68% of RNs were educated to master's degree level. Nurses' experience was recorded for hospital (number of years working in the hospital) and for HDU (number of years working in the HDU). Nurses' experience in hospital ranged from 30 to less than 1 year, with a mean of 17 years, while nurse experience in HDU ranged from 12 years to less than 1 year, with a mean of 7 years. The longest length of professional experience in the HDU was 12 years which is the total time elapsed since the unit was opened.

Nurses' demographics as well as professional data were requested in relation to the issues under study (Table 8.1, the last three columns on the right, shaded in grey). Nurses were asked to rate on a scale of 0 to 10, with 10 being excellent, their perception of the quality of care delivered in the HDU as well as their perception of the level of autonomy when caring for patients in the HDU. The nurses' perception of the quality of care ranged from 9 to 6 (mean of 7); lower levels were from RNs, two in the morning shift and one in the night shift. Autonomy perception ranged from 10 to 4 (mean of 7). Two participants rated autonomy development at 4; both are RNs on the morning shift, one a temporary and the other a permanent member of staff with different years of experience. One of them also perceived the quality of care at the low level of 6. Four participants (18%) suffered needlestick injuries during the study period. All of them occurred while preparing medication before touching a patient.

8.3. Focus Group Characteristics and Topics

Focus groups were performed during January 2010 and on average lasted an hour and a half (1 hour and 37 minutes for MS, 1hour and 36 minutes for AS and 1hour and 33 minutes for NS), creating 4 hours and 46 minutes of audio recording and 56,039 transcript words. The interviews generated 1 hour and 36 minutes of sound audio recording and 20,411 transcript words. This section includes a visual representation of the focus groups and a brief description of the main topics treated as a consequence of the group interaction and the interviewer questions. In Figure 8.1 the measure of the diameter of the circles is proportional to the number of words from each participant. In addition the Figure also shows participants' position at the time of conducting each focus group. In the same way Table 8.2 presents the contribution of each participant based on the number of words of each participant and their percentage of the total. When finished, participants remarked that the meeting had been very helpful in giving them the opportunity to

express opinions, situations, disagreements, frustrations in relation to patient care and nursing practice. They also volunteered that it is difficult to share space to talk about practice and many of them pointed out that they miss the opportunity to reflect on experiences of caring and clinical practice.
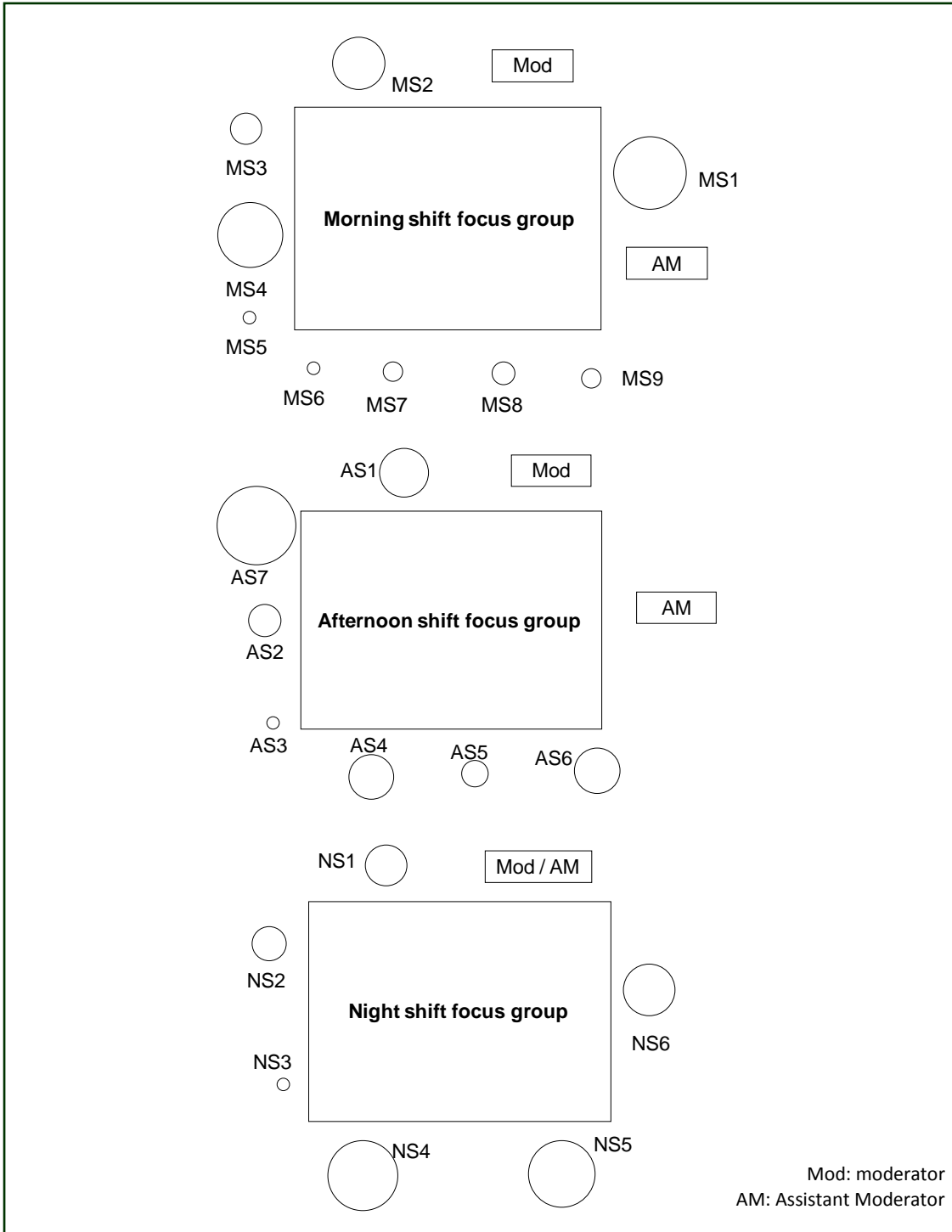
Figure 8.1: Visual Representation of Focus Groups Participants' Contribution

Table 8.2: Participants' Contribution Based on the Number of Words

Focus group from morning shift

P (9)	MS1	MS2	MS3	MS4	MS5	MS6	MS7	MS8	MS9
W (19014)	4927	3674	2316	4312	410	411	815	1171	977
W (%)	26	19	12	23	2	2	4	6	5

Focus group from afternoon shift

P (7)	AS1	AS2	AS3	AS4	AS5	AS6	AS7		
W (18357)	3261	1975	300	2904	1810	3034	5072		
W (%)	18	11	2	16	10	17	28		

Focus group from night shift

P (6)	NS1	NS2	NS3	NS4	NS5	NS6			
W (18666)	2831	2434	416	4758	4409	3818			
W (%)	15	13	2	25	24	20			

P (number of participants); W (number of words) of each participant and W (%) the % of each participant in relation to the total

Table 8.3 summarises the general topics raised by the nurses in each focus group while Table 8.4 identifies the topics specific to each group. MS-FG indicates data from morning shift focus group, AS-FG indicates data from afternoon shift focus group and NS-FG indicates data from night shift focus group.

Table 8.3: General Topics Raised in Each Focus Group

Topics	MS-FG	AS-FG	NS-FG
HDU structure	Unit structure creates difficulties in team-working	Enabled knowing patient	Unit structure creates difficulties in team-working. More time is needed to care
What goes well	New broad and open areas in workplace	Teamwork	Lower nurses turnover
What goes not so well	Two teams No natural light	Distrust of the new nurses Difficulties in communications with physicians	Artificial light Light intensity
Influencing patient outcomes and safety	No natural light Reflective practice and personal skills Protocols	Trust, experience, competence	Respect patient night rest Good physicians communication Autonomy
Worries and views about nursing practice	Nurses turnover, less experienced staff, patient turnover, inadequate attitudes of temporary nurses	Satisfaction with the hospital model of care adopted	Unit structure limitations Feel confident to respond to every situation

Within the general topics (Table 8.3) the importance and the impact of the unit structure on team-working and more time needed to care was highlighted, in contrast the unit structure enabling knowing patients. The consequences and the need for team-working were specially emphasised by the afternoon shift as a positive aspect although this may be influenced by distrust of new nurses and poor nurse-physician communications - both aspects were highlighted as not positive. Nurses' and physicians' communications evaluation differed in afternoon shift from the night shift; in the latter communication was perceived to be good. Another aspect highly valued by the night shift focus group was lower nursing turnover when compared to day shifts. Answers as to what did not go so well were mainly related to artificial light and teamwork. No access to natural light in addition to artificial light intensity had a negative influence on patient outcomes (rest) and safety (orientation).

Concerns and views about nursing practice can be grouped into those aspects related to the structure and those related to the process of care. In relation to the structure, once again the influence of the HDU structure and staff characteristics was emphasised in addition to patient characteristics. There was high patient turnover which implied a continuous adaptation to overcome changes that can occur. According to the nurses, the process of care is positively affected by the model of care and negatively by the physical HDU structure.

Table 8.4: Specific Topics Raised in Each Focus Group

Topics	MS-FG	AS-FG	NS-FG
Safe environment	Teamwork Information from previous shift	Monitoring, beds Family support	Positive expertise nurse attitude
Good patient safe experience	Introduce their self Explain what will happen during shift Know the patient	Know the patient	Central monitoring Unit environment
Avoiding medication errors	Communication with physicians, and primary care	Medication dispenser	Medication dispenser
Influencing medication errors	Hand writing prescription	Prescription problems	Prescription problems
Nurses' contribution to enhance patient outcomes	Knowing patients Influenced by staff characteristics, attitudes of advanced beginner nurses Care based on protocols Few time to reflect on care	Everything that nurse does is essential How: humility, experience, knowledge, accountability, working hard, trust, and attitude Pain assessment	Everything from nurse contributed Help patient to feel confidence, quiet, safety Promote a care of high quality and comfort Empathy, trust

Within the specific topics (Table 8.4), nurses' contribution to provide a safety environment and to enhance patient outcomes were raised by the nurses. Differences between advanced beginner (fairly new) and expert nurses were stated. Special attention was paid to the influence that advanced beginner nurses' attitudes may have in the consolidation of a safety patient environment if this nurses did not express doubts about how care was organised or did not pay attention to patient needs. Trust became the main issue to enhance a safe environment for the patient. Features about what and between whom, were presented as key aspects for a safe environment and good patient safe experience along with protective aspects. These topic areas were used as the starting point for focus group data analysis; findings are presented in detail in the next sections.

8.4. Core Category: Enabling Patient Comfort

'Enabling patient comfort' was derived from nurses' data analysis based on the construction of four interrelated main processes, which constitute the four main categories: 'adapting to the context', 'facilitating strategies', 'powering elements', and 'making sense of the outcomes'.

Figure 8.2, presents the final integrative diagram organised using the nursing role effectiveness model (Irvine et al., 1998:76) which is based on Donabedian's framework (Donabedian, 1966). This organisation allowed a workable outline beginning with 'adapting to the context' within the structure components, followed by process components which included 'facilitating strategies' as well as 'powering elements' and finally by 'making sense of the outcomes' within the outcomes component.
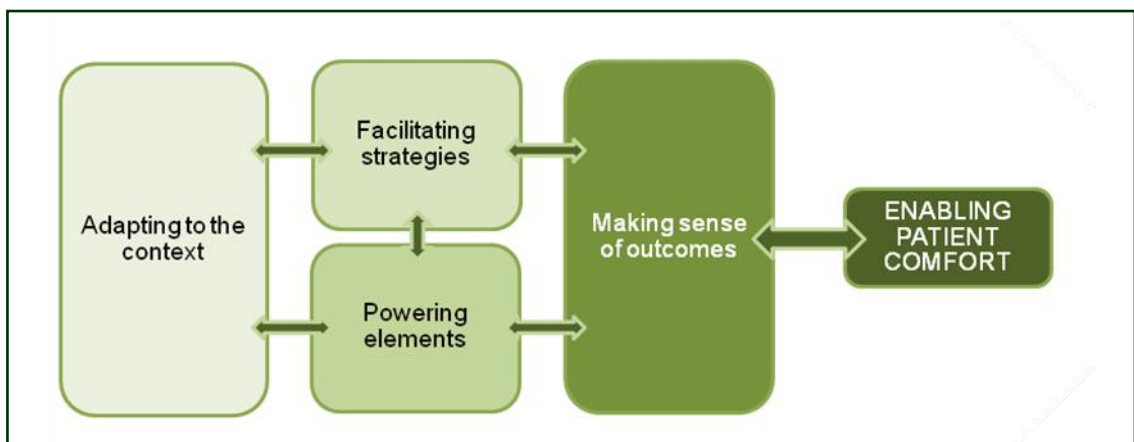

Figure 8.2: Final integrative diagram

Although the Figure follows a linear representation it is important to highlight the flexibility in and inter-connectedness of the relationship between the four main categories and the eleven subcategories.

At the end of the Chapter, in the Chapter Summary section Figure 8.3 displays categories and subcategories in the full, final integrative diagram. In the following four sections the main categories and subcategories are described with each supported by quotations form nurses.

8.5. Adapting to the Context

In this section relevant aspects of the care context are discussed according to the study goal. Two subcategories were constructed from the analysis, 'HDU structure' along with 'characteristics and organisational issues'. 'HDU structure' included all the themes related to environmental structure and the human and material resources available. On the other hand 'characteristics and organisational issues', when considered as conditions and situations, may promote or prevent specific nursing interventions to enable patient comfort that influenced patients' safety and outcomes.

8.5.1. HDU Structure

Issues about 'HDU structure' were widely discussed during focus groups probably due to the fact that the data collection period was only 3 months after the transfer date to the new HDU as explained in Chapter Five. The analysis presented below, focuses on the impact of the HDU structure on nursing care and the influence on patient outcomes and safety, as well as the interventions performed by nurses to overcome these consequences. HDU structure emerged as a salient characteristic that must be taken into account because of its influence on patient care. As an example I took the words of nurses on the afternoon shift who described different patients' perceptions in relation to the HDU rooms named *boxes*[16]. Special attention to HDU structure characteristics was paid by nurses in the night shift which are summarised as the NS6 quotation.

AS1- ... the best place to sleep is that corner there. If you're better, it's the best place for sleeping because you hear less noise
AS4- But you feel like, it's like … a cubicle, because there are no windows, it's a like a box .. So if you have … what's it called? You have …

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[16] The word box, boxes in the plural, refers to the space where the patient is located during HDU admission, it is not named room because it is a closed rectangle; a sliding door allows access to the interior; the sides are glass partitions from the top half. A curtain prevents seeing into the next box

NS6- And then, what you can see from some of the boxes ... I mean, many times you have to go, unless the one you've got just in front or right next to you needs you, but the ones at the back ... So, you have to go... And if there's someone really disoriented there ... that's bad ... because you either stay there all night long, or ... or you have to be getting up constantly, supervising, so there isn't a problem.

'HDU structure' characteristics impact on the process of care. Nurses have the capacity to implement effective care based on their own autonomy whilst respecting patient choice, making decisions about what is the best to keep patients safe as pointed out by the night shift nurse (NS6). In this situation the nature of nurses' interventions could be modified according to patients' status and influenced by their perceptions about the structure. This means that the nurse knew the patient and both took a shared decision based on patients' preferences and perceptions. The patient feels comfortable to express these feelings to the nurse which means that a therapeutic relationship has been established which involves knowing the patient.

Participants reported some difficulties when caring in relation to the large HDU; these difficulties affect nurses negatively (see NS6 quotation below). As a consequence, as illustrated in the quotations below, due to loss of time, these difficulties may prevent or avoid enabling interventions.

NS6 - ... You have to go a long way ... you say 'What a long walk just for a Primperan [metoclopramide]!'... A Primperan!... What ... any other medication ... atropine, or whatever... and... and that's what makes you sometimes go around with... more stressed... , it's time you lose, isn't it? when trying to be quick at work

The rationale is that as the nurses perceived themselves to have less time for patient care, this fact could act as if there were a problematic workload situation; the condition could get worse in the face of a life threatening situation when a fast response is crucial, for example when an injection of atropine could be needed.

One of the main problems of the new structure for patients is the lack of natural light and the intensity of artificial illumination. Nurses illustrated the impact of the structure on patient outcomes and safety. If patients missed the daylight, comfort, recovering and illness progression may be affected implying changes in patients' outcomes. Additionally to outcomes, safety also may be affected, because it becomes more difficult to keep the patient orientated as stated in the MS2 quotation below. There were no differences between shifts perceptions about the light issue. In addition the majority of nurses carried out different interventions trying to avoid or mitigate the lack of daylight and the discomfort due to the artificial light intensity.

MS2- There was a relative who told me that for her husband it was so important, that this was upsetting and we agreed that his grandchildren ... sorry, children, would ... draw a sun and a moon to put next to the clock. We'd put the sun if it was daytime and the moon if it was night time. Imagine how important that is. That ... that is a ... You know ... sorry ... it makes me angry ...

MS3- Another problem is that the light, it's electric and it's so strong ... so strong that many patients end up asking, after half an hour, to be left in the dark, because they can't stand the light

With this intervention MS2 demonstrated to the patient and their relatives, her concern about the patient. This was also an 'enabling patient comfort' intervention because the nurse provided the patient with control over the environment with the simple fact of knowing what time of the day or night it was, leading to his comfort. The new HDU structure promotes patient comfort as stated in the following quotation.

MS1- I like the new unit because it's new, it's comfortable, patients are much more comfortable

Remaining with the structure but focusing on human and material resources, variations in approaches by nurses are now described. Findings suggested that in relation to patient safety and outcomes, individual characteristics of the nurse and the type of monitors in use were the most important elements affecting the monitoring process. Monitoring is key for patients' safety and outcomes in HDU as an essential tool to prevent and detect possible incidents, errors or adverse events (Institute of Medicine, 2004:32). Nursing surveillance is consistently related to a lower mortality rate (Institute of Medicine, 2004:34). To monitor and improve quality, clinical forethought is required (anticipating and preventing potential problems), identification of dangerous conditions, averting accidents, team building, learning from mistakes, system repair and development of cumulative clinical wisdom (Benner et al., 1999:440).

Nurses' data revealed these two key aspects; on the one hand, the role of the nurse and, on the other, the quality of available resources were fundamental to ensure safety and quality monitoring. Expert nurses performed interventions that ensured patient safety, such as checking the alarms at the beginning of the shift. High quality monitors guaranteed a basic safety level because they could not be turned off and in addition they could distinguish alterations in the patient's status that caused the alarm, a fact that affected the nurses' response as reflected in the next quotations.

AS2- You can set what you want on this monitor ... you can program what you want and this ... Obviously ... obviously ... the beeping's annoying ... because sometimes it beeps for nothing important ... but there's an important sound that's coming up, everyone pays attention to that ... That dumb 'beep-beep-beep' stands out ...

MS1- That's the claim that we had ... we don't find the alarms reviewed as we think they should be. And this, it's the first thing I do. I don't know if it's just a reflex, if ... It's a way ... how I organize myself ... first, before starting to get medication and whatever and think whether or not to do patient hygiene ... first I need to know how patient is and how they spent the night. First. And then I go to prepare medications, monitor vital signs and then I'll do the hygiene

Each nurse decided what the appropriate margins were when programming the alarms; this capacity to decide denotes that the nurse had control over the situation (autonomy, power) and therefore she was empowered to exercise this power. The

activation of an alarm implies an immediate response which was influenced by the patient's health status, characteristics of nurse in charge and also the work shift. An experienced MS1 nurse, with a master's degree in critical care, described an enabling intervention in the above quotation. This intervention was supported by her own power; she is competent due to her educational and expertise levels, her attitudes and skills.

Literature supports that educational preparation and expertise are a type of power nurses need to make an optimal contribution to patient care (Manojlovich, 2007). Mean professional experience in HDU was 7 years and 68% of RNs have a master degree level, meaning that the majority of nurses were experts. The purpose of safety and quality monitoring is to provide appropriate and timely interventions; from the illustrations, the common thread that emerged was the patient's comfort. Nurses' interventions included in monitoring such as vital sign or blood monitoring are considered by Kolcaba as technical comfort measures; overall, this author considers as technical comfort measures all those interventions carried out to maintain homeostasis and manage pain (Kolcaba, 2003:252).

8.5.2. Characteristics and Organisational Issues

As part of the structural component, this category explores the characteristics and organisational issues as expressed by nurses. Under this label those issues that may affect patients' outcomes and safety as a consequence of the previous influence on the process of nursing care components were categorised, such as professional autonomy. According to the data, nurses relied heavily on their autonomy to provide nursing care. Autonomy allows nurses to practice to their fullest and gain respect for their contributions (Kolcaba, 2003:183), but the mandatory need for a precise organisation and a clear definition of roles and work skills in nursing must be taken into account (Benner, 2001b:161). It is interesting to note that two nurses in each of three focus groups rated perceptions of autonomy, on a scale of 0 to 10, as eight or above eight (Table 8.1). Two of these six nurses, MS1 and MS2, were those who conducted nurses' interventions to enable patient comfort. Other accounts given by these nurses and quoted below, illustrate the similarities between them about the perception of autonomy which positively related with nurses' satisfaction.

> MS2- I like it this way. And it's true, I have worked in other places but here in [name of hospital], I have to say, the nursing team is always autonomous
>
> MS1- I'll be absolutely honest with you. I did not go and work in [name of place] for one of the … although it would have been very convenient for me ... Eventually, so much travelling … 20 miles is … is reasonable ... but it's tiring ... But the reason is the lack of work … autonomy in other hospitals.

MS1 nurse was referring to the fact that she enjoyed deciding about patient care, to have freedom to act where she was competent in the best interests of the patient (Kramer & Schmalenberg, 2006:37), to have responsibility for certain activities and to have to provide the rationale for them as well as to know that a reason and activities can be judged. According to Thomas this is in short accountability (Thomas, 2008:9). MS2 lived 30 km from the hospital and the reason she kept working in the study hospital is the level of autonomy that nurses have to care. According to data, autonomy and accountability are closely related. The performance of care with a high level of autonomy implies the acceptance by the nurse of accountability for this action; the next quotation illustrates that fact.

> *MS2- I feel ... I feel very accountable in my job ... I know that one day I could end up in court [ ] I am aware that one day I could end up in court because of malpractice... poor value judgements ... I could well do so. But I like to feel accountable in my job ... I mean, I like to make decisions, but … you know.*

Autonomy and accountability are two of the essential features of Magnetism (McClure & Hinshaw, 2002:34). High levels of autonomy were identified in Magnet hospitals becoming an essential attribute of the culture of excellence in these organisations. Moreover evidence supports the relationship between autonomy and providing quality care to be related with nurses job satisfaction (McClure & Hinshaw, 2002:35). Professional autonomy is a search for control over the content of nursing practice; it represents a kind of power. Due to this control, autonomy constitutes a key element of empowerment in nurses (Manojlovich, 2007).

In contrast, only two nurses from the morning shift focus group, who rated the perception of autonomy below five, made no comment implicitly or explicitly about autonomy. When their contributions were analysed, one (MS6) made few contributions to the focus group, and the other (MS8) only made reference to the HDU structure preventing 'enabling patient comfort' and that, in addition, nurses did not work as a team and there was a lack of time for reflection.

> *MS8- The truth is that ... that I never realised before how important the structure in a place is when working ... Because you're always reading that ... 'structure is all-important' ... But until there's a change in the structure … you don't … don't notice it, but yes … yes, it determines many things ... It determines that there is nobody continuously in ... That there are walls, that you can't see everything ... structure doesn't help … A group that ... that is divided and little time to thing and ... you have to run about a lot. And then, all these things, you know, they add up*

The nursing hospital model of care also may promote nurses autonomy. The next quotations below from the management and care level illustrate these themes.

> *RN1- Well, the nursing model is good, a model very much based on nurse autonomy. Nurses have a great deal of autonomy. They have good decision-making capacity regarding patient care.*
> *NS5- No ... But here too ... we ... we're ... we're lucky to have a great deal of autonomy at the*

nursing level

Following the control over the content of nursing practice provided by professional autonomy, the leadership and management category emerged as an important organisational issue. According to data, leadership had a greater role for nurses at a hospital level and as well at the unit level in the day to day working with colleagues. As the further examples related with this concern suggested, leadership was identified with the capacity to change, to improve, and to support and a sense of advocacy, allowing nurses to review nursing practice and promote excellence from this engine for change.

> *AS6- I think a leader is necessary, but also that leaders don't consider themselves leaders … that we know that ... that you could go to … him or her … for ... whatever you need*
> *RN2- I think it's important ... having someone who manages ... Let's see ... who has ... I mean, let's see ... yes... Missing is someone who... who leads the team and builds a sense of the team a bit more... a sense of improving ... a sense of willingness ... to … to say... 'Let's go forward, improve, progress. Let's get trained, exchange things, argue if necessary. Let's present nursing cases'. I mean, leadership is missing here ... And as colleagues ... I know … I can learn from them ... they treat everyone well, with respect ... I think they do their job well and are responsible ... What would I like? I'd like to see more good intentions. I'd like to see them more eager not to stay stuck in a rut, for our profession to go further, for the unit to go further.*

The data indicated that different types of leaders were considered. The first quotation (AS6) referred to a registered nurse leader who can assume this role in the face of difficult or uncommon care situations while the RN2 quotation refers more to a management level; both types of leadership are fundamental to gain power as a group. To enable patient comfort, the main issues is the individual compromise with caring. RN2 nurse reflected also on the need and the importance of group membership, in addition to the ability to improve and innovate. Furthermore individuals had their own responsibility within the team because of certain factors such eagerness to learn.

As illustrated in the following examples, when it was considered how nurses in the afternoon shift work, teamwork and team commitment emerged as essential element supported by recognising other nurses' competence, respect and trust. From the quotations below, nurses values emerged which implied power to nurses; when power was applied in practice this empowerment promoted quality and safety of care which enabled patient comfort.

> *AS2- Anyway, I think the afternoon shift has a plus in this regard ... a positive side … from.. what I see, we're quite tolerant with everyone ... with different working styles. Not because I believe it should be done 'this way', that someone else has to do it 'this way'. I mean, there are ways of working, the result is the same, but the technique may be different. You know what I mean?... I means! I think we work as a team.*
> *AS7- I know, if I have a lot of work, I have to do my own patients, straighten their beds or whatever, and do dressings and so on and I can't … whatever*
> *AS1- It's true that … I think so, right? That's what it means. And we work a lot as a team and you can immediately call on the others. I mean, if you need something you can count on the others and this is important. This is missing in other shifts, right?*

Teamwork was clearly important for the afternoon shift, based on values such as compromise, trust, respect and competence (do the right thing; make decisions based on what's good for all). Associated with these values and the possibility of sharing all of them, the nursing staff characteristics came to the fore, including nurse staffing characteristics, such as years of experience, training or educational level, influence over the quality of care. The nurses' data revealed that these qualitative staff aspects tended not be taken into account; only the number of nurses needed regardless of experience or training or educational level was considered. To support that statement one of the most important issues was workforce stability, meaning that the turnover rate must be low.

MS3- Staff stability. It's risky. Highly risky … there are so many novice nurses from last year compared to experienced nurses … One experienced nurse, that's three novice nurses. That is high risk. And it's irresponsible. We'll make cock-ups, many cock-ups. We can do a lot of damage in these conditions.

MS4- And the system doesn't help much either because we are … we are numbers … You need to have 4 and there need to be 4 in each unit … And there's one missing in the ICU and they go … 'Ah! Not to worry, we'll send you one … '. No matter who you are, just 'I'll send you one.' OK. The one who has just finished … 'Don't worry, we'll send a nurse.' And then the nurse who comes on doesn't even know what a paracetamol is …

NS5- Perhaps what's less stable now is the substitutions. Before we had substitute staff who were always the same. They knew the unit perfectly and …

These accounts given by morning shift focus group nurses illustrate the importance of low nurse turnover in addition to the matter of advanced beginner versus expert nurses[17]. All nurses agreed that the main issue was nurse turnover in contrast to the ratio between advanced beginner and expert nurse which only became problematic when it was three or more to one. So, in short, when the percentage of skilled nurses is less than 50%, work conditions compromised safety and quality of care, meaning a risk for patients as well as generating anxiety in experienced nurses.

Most participants considered turnover as a preventative element to 'enabling patient comfort' because high turnover affected the teamwork capability for thinking in action and reflection on what worked and what did not. MS4 nurse described the situation that arises when nurses do not know the unit and the implication this has for teamwork and her workload. Furthermore, the account given by AS7 nurse illustrated that turnover also affected patient trust.

MS4- … but every day you invest time and effort … One day you … and the next day you explain the same thing again, and the next day again the same … And you have your own work to do, you know? You can't carry all the unit's work on your back …

AS7- I think they don't trust … because they don't always see the same people, and … it's like you have to prove they can trust you, and when it seems they're starting out … of course, it's …

---

[17] Following Benner framework advanced beginner has less than three years of experience while expert has more than five, both in the same setting (Benner, 2001b:20-25)

Trust is essential for therapeutic relationships, according to Hupcey *et al*, 'trust emerges from the identification of a need that cannot be met without the assistance of another and some assessment of the risk involved in relying on the other to meet this need…' (Hupcey et al., 2001:290). When nurses pay attention to human needs without limiting them to a specific dimension of the person, they are 'enabling patient comfort'. These actions could have great significance in promoting trust as indicated from the above quotations.

In this section the characteristics and organizational issues influencing key themes as teamwork, autonomy and competence were discussed. As they constantly emerged from nurses' data, a main category was built as 'powering elements' which is presented in section 8.7.

8.6. Facilitating Strategies

'Knowing and informing patients' as well as 'being sensitive and being with' and 'keeping calm and instilling confidence' were ingredients in nurses' strategies identified from the nurses' data. These help patients to feel comfortable and safe in addition to promoting positive outcomes. Knowing and informing patients were also central strategies within the 'enabling patient comfort'. Nurses considered it essential to know patients; it was not possible to deliver quality and safety of care without knowing the patient as well as giving information according to their needs, not only in relation to their health status, but also and more importantly in relation to what will happen over the next few hours: for example, the interventions planned during the day or shift, or what is likely to occur in relation to diagnostic and therapeutic tests. 'Being sensitive' involves being sensitive to information needs and includes the ability to receive information as well as give it (Sayers & de Vries, 2008). On the other hand, 'being with' the patient involves the nurse's presence that in essence is much more relevant that just doing for the patient (Benner, 2001b:57); the nurse presence allows the patient to have a significant exchange with the nurse (Zyblock, 2010). Being sensitive and being with strategies were identified in the data analysis and are reported in the relevant subsection below. The other strategy identified was associated with nurses 'keeping calm and instilling confidence'. This highlighted that whilst caring and irrespective of the patient's clinical condition, nurses demonstrated efficient, peaceful and empathetic attitudes, rather than a position which suggested events were out of control with poor consequences for the patient. Nurses' accounts illustrated all these 'facilitating strategies' detailed in the next sub-sections.

8.6.1. Knowing and Informing Patient

Nurses' professional status implies knowing the patient is one of the few things that nurses cannot neglect when providing quality and safety of care. In the HDU the majority of patients were admitted for a brief period of time, which makes it more difficult for nurses to be aware of all patients' conditions, understand the patients' illness experience and identify relevant changes in clinical signs and symptoms. When analysing differences between nurses shifts, these issues became more difficult for nurses during night shifts. The reason was the specific schedule of night shifts, with a long period (2 to 3 days) off work, meaning that after that period all patients admitted could be from these last three days and not known by the night shift. Nurses recalled that it is necessary to know and understand patient conditions as soon as possible to detect crisis and prevent complications that may arise during the shift as the core of a quality and safety. The accounts given by nurses quoted below, illustrate the essence of knowing patients in order to provide comfort care based on patients needs and on a professional nurse-patient relationship. In addition RN2 highlights the greater effort needed by night shift nurses to know the patients making it obvious how shift patterns affected this aspect of care.

MS3- That is … that is an absolute must … I mean to say if you are the nursing professional taking care of this patient, you must really know them … I can't say 'I haven't time. I don't know them'. No …You can say 'I haven't washed them' ... but not I don't know them'. Obviously not everything, but ... You're the one who knows the truth. The others don't know them. And you know perfectly well that when that patient is running a risk, they are in need. And you do it for them or it might take ages. That's what we do.

MS1- ... we have a broader and more global vision of the patient, one of the things I always do with patients is once the shift change is revised, I come to say hello to every patient and I introduce myself

RN2- It's an effort ... it's an effort ... it's an effort ... what's more, trying to read and concentrate at night... your capacity is not the same. And ... the patient variability... let's see, I mean to say ... I like the fact that there are different illnesses. I don't like the fact that every day you have to learn about so many different patients ... That, at least, as you get older, keeping the patient's history in your head … each day having to learn about 3, 4 patients … If you want to do that well …well … it's an effort. It's an effort because also, that's something. I also like to do once I come in, because whatever happens overnight, I already know all about the patient.

Knowing patients emerged with the same intensity when comparing acute patients with chronic patients' in acute situations. Nurses pointed out the importance of considering patients' knowledge about their disease, specially for those patients with non-invasive ventilation and haematological diseases. This strategy enabled patients' comfort; patient care delivered at home was recognised and reviewed considering the safety of the process, making the patient feel more comfortable so the care to be delivered at home was familiar for her/him.

AS4- ... specially the chronically ill patients... they put it on, they know if they doing it right here or there, and when they know if they do it right or not. And since they bring it from home, they take it back home... also the haematology patients

NS1- ... I try to do what ... I try to follow the care they have at home. And if I do try to do so, it's because it's a sort of safer and more comfortable for them. If they're correct, of course, and appropriate at that moment ...

Analysis also revealed that expert nurses believed that information was a good strategy during caring. It always had to be adjusted according to the patient's needs. Because patients' information needs differed, it was not possible to apply information provision mechanically. Instead, information must be adapted to patient requirements, always being alert for signs that indicated whether or not this information was enough.

NS6- I've come... I've come to the conclusion ... after … after all the years I've been here, that if you inform the patient about ... about what you're going to do... although you're simply telling them what you're doing and why ... the patient feels better…

NS3- No ... this ... informing patients, it depends, it really depends, because too much information might make ... a patient … nervous, you know?

AS1- And they start explaining things and... right? And … you know? It makes them participate, right?

Information to the patient also included patients' expression of their own understanding and interpretation of their condition. According to Benner, the fact that nurses allow patients this expression plays an important role in the patient's illness and recovery experience (Benner, 2001b:84). Again when considering specific attributes for the different shifts, information to the patient took on special significance during the night shift as reflected in nurses' quotations from this shift. Nurses' data indicated that information was provided with the aim of reducing patient anxiety in the face of a stressful situation and an unfamiliar environment that admission to HDU can be.

8.6.2. Being Sensitive and Being With

This category includes nursing attitudes that influence patient-nurse therapeutic relationship. According to Sayers and de Vries (2008) being aware and communicating effectively are central to being sensitive which includes being open, aware and responsive. Data from the nurses points to empathy in relation to considering the patient's point of view during their time in the HDU. Nurses perceived the patient as a person who was isolated in an environment with unknown people; in consequence, nurses' attitudes based on this perception must aim to promote patient adaptation to HDU environment. Patients experience anxiety which can be overcome by nurses' applying interventions to strengthen communication and comfort. In relation to being aware and communicating effectively, it was important to consider noise, alarms and conversations in the HDU. Nurses considered

those components essential for patient safety and positive outcomes, attaching importance to letting patients know what will happen during the shift, thus being open and transparent in relation to them. The following quotations clearly demonstrate these points; the whole quotation is reproduced because it helps to understand the meaning about being sensitive (NS1) and being with (NS6) as well as the influence that nurses may have on patient recovery (MS8). According to MS8, the nurse in charge of the patient influenced their progress because of the type of therapeutic relationship established and the interventions performed.

> NS1- ... I try to do what ... I try to follow the care they have at home. And if I do try to do so, it's because it's a sort of safer and more comfortable for them. If they're correct, of course, and appropriate at that moment ... Otherwise, you try to convince them what you're doing is, you know, looking for solutions ...
>
> NS6- And I'll add empathy to that, right? .. that you have with that patient. Putting myself in their place... sometimes ... we don't often do that. Because I ... I don't always do it but sometimes you say 'Hell!' And see if ... if I was in this situation, here in bed and at the mercy of what could be done to me and what I'd get ... You are very receptive... You hear everything ... You hear all the noises, alarms, comments ... whatever. It's ... it's another point of view, another perspective on the admitted patient. It changes you a lot. So you have to keep this in mind. The patient is alone in strange surroundings, that he doesn't know and with unknown people. So, of course, it's what ... it's what we were saying... isn't it?.. To reduce anxiety ... to remove ... to give them confidence, whatever ... and do our job 100% ... 95%, right? In this regard. I don't know ... Well, this ... I get in, I see the patient, and I check the ... And I ... and I see things, right? I check everything ... I talk ... First of all I introduce myself ... ehh ... They may say, 'I need something'... 'How are you?' 'Are you in pain?' And they'll be saying 'Ahh, I'm not sure. I've got, here behind ... I don't know ...' And well, you start doing things, right? While I'm in there ... I'm observing. [Patients] feel an ... incredible amount of anxiety. Because it's enough to have doubts about ... about what will happen tomorrow, as they say ... because they may also think, 'What am I being given now?... What's being done to me?' I always inform patients ... I try to tell them as much as I can. And I know for a fact, you know? It greatly reduces anxiety ... telling them things, informing them.
>
> MS8- Depending on the nurse in charge of the patient, that patient will do well or badly.

In the latter extended quotation from NS6, it is evident that the nurse's care with a holistic approach involved nurse presence. Nurse presence allowed the patient to perceive the nurse's caring attitude and enabled him/her to take an active part of his or her care. The illustration below details a nurse's enabling intervention targeting comfort, which represented an aspect of nursing care that influenced patient outcomes and safety. Due to this enabling intervention, the nurse decreased patient anxiety and enabled patient comfort.

> MS7- Sometimes you even skip the rules ... And sometimes you say 'Okay. It's a little girl, right? It's the grandchild, but he hasn't seen her for days'. Or, for example, we had a ... this grandfather fainted on the street, he was with the grandchild aged 4 years old and he was frantic, the man, because of course it was the granddaughter who ... who got help ... They were walking together ... and he was very concerned about his granddaughter, right? Well, the granddaughter came by ... and was with him. Here patients are very lonely, very isolated, with little time with their families ...they feel very ... lonely, really.

It was a matter of being sensitive to the patient's psychological needs. As Benner suggests expert nurses see the value of their presence for patients and know the

importance of appropriate use of touch to be able to be with the patient (Benner, 2001b:58).

8.6.3. Keeping Calm and Instilling Confidence

This category encompasses reports of nurses' strategies used to communicate to the patient that everything was under control as well as inspiring calm and confidence. 'Keeping calm and instilling confidence' in addition to providing a safe environment were crucial strategies that become even more important in critically ill patients. Communicating effectively was a pre-requisite for ensuring the control needed to manage emergent or life-threatening situations, being aware of the patients' requirements, and looking for solutions. Moreover 'keeping calm and instilling confidence' avoided making hasty decisions evading the adverse consequences hazards that these decisions could have. 'Keeping calm and instilling confidence' was related to individual responsibility.

> RN2- … like … like … almost like an actor, and … and to show … that we have … to act quickly, that we're worried but that … as if we everything seemed under control somehow, you know what I mean, right?
> NS4- I think that our body language … eh? Also … Our attitude. I mean, if we are more or less confident … Information, yes, because if you tell them …
> NS1- Otherwise, you try to convince them that what you're doing is, you know, look for solutions ..
> RN2- Or you can … you can rush at the same time … I have this perception about two things … Yes … ehh … Exactly, I think that sometimes rushing, you … eh? … one step maybe … and well, you can do it right more calmly and focus more... you make a better decision... ehh … And I think that perhaps, as I said already, that... that... that maybe this is my theory … I mean, it's my way of doing things and it could be very, very criticised. I guess it's criticised, eh? I do … It's what I said before... a bit of everything is done with the patient …

When situations generate patient stress, for example as exemplified by the next quotation which describing a patient situation with an upper digestive tract haemorrhage, a good strategy for the patient to feel safe was for the nurse to demonstrate calmness and support, while she was taking the necessary therapeutic interventions.

> NS1- They get too alarmed at the sight of blood. You say, 'Let's see… ' Of course you explain the technique, of course you explain clearly what's happening but I also often tell them, 'Blood is very shocking as you well know'. So I start preparing themselves mentally. Since they see you're calm with them … washing them and such, calmly … They say, 'I'm probably not is such a bad way'. And since they see you there beside them, they … don't … don't feel alone … don't feel …

Not making hasty decisions and being calm in the face of life threatening situations implies selecting what is communicated to patient and therefore the amount and type of information that is provided. Consequently there is a clear relationship between 'keeping calm and instilling confidence' and the preceding section.

'Keeping calm and instilling confidence' is a way of demonstrating that the situation was under control; as a consequence, the patient trusted in nurses which may then empower the nurse's role. If the nurse delivered an intervention calmly it helped patients

to be more relaxed and comfortable; in contrast if the patient perceived that the situation was uncontrolled then the patient was more anxious as illustrated below, in the next sub-section 8.8.1, in relation to a situation where a temporary nurse did not pay attention to the patient's needs and situation got worse.

8.7. Powering Elements

Factors which affected the direction and success of nurses' interventions whilst influencing patients' outcomes and safety as well as 'enabling patient comfort' were considered 'powering elements'. Within those elements emerged three subcategories 'governing values' (advocacy, accountability and autonomy), 'individual competence and expertise' and 'teamwork'. The following subsections give details of the range and attributes of these elements.

8.7.1. Governing Values

From the description of the nurses' interventions three key governing values emerged that made a difference in the care process; these values were advocacy, accountability and autonomy. Advocacy can be defined as intervening for vulnerable people who need it, as a requirement to represent patients' interests (Baldwin, 2008:15) and to plead their causes. Accountability mandates that individuals were answerable for their actions and have a duty to act (Peate, 2006:469). Accountability and professional judgments are concepts implicit in the autonomy which data analysis indicated could be associated with motivation and nursing care interventions toward specific patient outcomes such comfort. The next quotation illustrates the importance of the individual nurses' attitude when facing the same clinical situation.

> MS3- ' Why should I seat the patient? ... It's an effort and nobody has said to me to seat them'… I decide whether to seat or not a patient. Obviously. It's up to me. I know them better than anyone and I know whether they should sit or not. I don't have to wait for so-and-so to tell me 'This one can be seated', it's my decision.

Early patient mobilisation was a key to patient recovery. Nurse MS3 described a patient situation in which early mobilisation was needed; the nurse explained that she was accountable for performing this intervention. This implied the use of critical thinking, based on which patient care decisions were made. Critical thinking is an essential component of quality and safety nursing care as well as professional accountability. Not being accountable was considered an attitude; it was not a matter of advanced beginner nurses or being deficient in knowledge; it was a lack of individual responsibility due to a

preference for being in a more comfortable and easy position without having to make decisions, as it is illustrated in the quotations below.

> *MS3- They don't do it because they are not let or because really it's just easier that way? Because you find this here too. The lack of ... lack of involvement because ... you know, often it's a question of the easy way out ... Instead of thinking, deciding and …*
>
> *MS4- OK, you don't assume responsibility*
>
> *NS4- Sure, I mean to say ... I think that sometimes ... sometimes there are problems of inexperience and sometimes of lack of responsibility. Which is not the same thing, is it?...*
>
> *Lack of responsibility, it isn't a problem of knowledge…I don't think it's a problem of knowledge, it's attitude, right? A total lack of responsibility because we all lack knowledge ... lack of experience. I mean, eh?*
>
> *RN1- Of course. Of course they pay us for thinking ... Gee! If we didn't think, we'd rather work on a factory assembly line, where ... we should probably also have to think, right?*

In the HDU, patients often required specific and life-threatening expert care thus nurse staffing characteristics had a special relevance. Under pressure, the values listed above were of particular significance. Considering what happens in the life-threatening situations, similar responses to those in the previous quotations are revealed. The extract below describes a critically ill patient incident that gets worse during the night shift.

> *NS6- I'm concerned … about … let's see … substitute nurses ... some are good, eh? Some people are great. But I worry about this lack of ... a sense of urgency or emergency. I mean ... look, if you are ... You're in a HDU, right? But if you're in a ward you also must have this ability to assess the patient ... Let's see, what's happened to them, why were they admitted, what may be happening to them?... in a general sense. And act decisively. I mean, what you can't do is believe that the patient's just faking it, looking for attention. That no ... I don't accept that. You understand? So, that really worries me... an attitude of ... of carelessness. I mean, we aren't here ... 'Yes, yes, yes'*
>
> *NS4- Of course, until you go in and see them and say 'Call the doctor because something's going on here'*
>
> *NS2- And finally I said 'You're in charge of this patient, look after him.' I said ... 'We've all gone and you don't pay any attention'... Wow! ... it's that ... she said ... I don't like ... don't like being here ... . I said, 'OK, but you're here.' What a night ... the man had to be intubated in fact ...*

The patient expressed discomfort and experienced dyspnoea and continuously demanded the presence of the nurse. The nurse in charge of the patient who was a temporary[18] new nurse in the HDU, in contrast to what an expert nurse would have done (NS6), had not considered all the early warning signals of worsening clinical status in this patient and thought that the patient was just faking. This situation lasted several hours. The rest of the team, realising the patient's situation, insisted that she must attend to the patient. Suddenly the patient's situation deteriorated, becoming a life-threatening situation that required immediate intervention by the team.

The temporary new nurse did not have the skills and experience to manage such deterioration and she did not recognise the crisis before the patient actually arrested, whilst her attitude prevented 'enabling patient comfort' and safety care. Instead of being

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[18] Temporary nurses' referred to those nurses who have no fixed hospital employment contract. The contract period may be even just for a day

aware of the patient's changing situation, she decided that the patient only wanted to attract attention. This seemed to be both a problem of knowledge and expertise, but also a problem related to attitudes. The expert nurse said, '*You are in charge of the patient*'; this meant that the expert nurse was asking the temporary nurse to pay attention; the expert nurse also stated that the temporary nurse must assume responsibility. At that point, the individual responsibility of the expert nurse became lifesaving. When the temporary nurse was asked about her attitude she stated, *'I don't like being here'.* This sentence can be interpreted as a lack of accountability, that is, the nurse does not pay attention to the patient's needs. She expresses that she does not want to work in the HDU and she fails to act with professional accountability. This situation created a conflict in the team that altered the dynamics of their work, jeopardising patient comfort and safety. It shows that individual accountability affects teamwork accountability.

Reflective practice is a key element of liability because it facilitates analysis of the situation, thinking and reflecting on the practice. It implies that nurses, skilled, autonomous, responsible and safe, make judgments and are able to take an appropriate decision to promote patient comfort. What was interesting in the analysis was how accountability influenced advocacy. Accountability means that one is responsible to others for one's own actions and decisions; in short, it is linked to responsibility and authority (Thomas, 2008:10) as well as to the final step with advocacy which promotes acting on behalf (Baldwin, 2008:15) and to plead the cause of another. According to Benner *et al.* overcoming system failures requires actions at the practice, administrative, social and political levels. Maintaining a vision of good practice and the tussle against poor practice can be a source of empowerment (Benner et al., 1999:445).

8.7.2. Individual Competence and Expertise

Competencies in nursing establish the minimum level of knowledge, attitudes and skills necessary to perform safe and quality practice. Competence is an essential element of nurse expertise, defined as the ability to repeat the performance to the same standard on a regular basis which ensure that expertise is developed (McLaughlin, 2008); in short it is the ability, qualities and capacity to function in a particular way (Peate, 2006:471). Analysis of the nurses' excerpts seem consistent with this perspective. They revealed how expert nurses were recognised, how they acted and the impact of their experience on outcomes and patient safety by means of 'enabling patient comfort'. Expert nurses received recognition from other professionals because of their competence. This

recognition was shown by seeking other nurse team members' cooperation, specially when diagnosing and managing emergent or life-threatening situations. Team structure and team members' knowledge, facilitated the work of these expert nurses who relied on the group fostering collaborative practice.

> AS5- Of course, but I mean that … that when they have a problem, they ask for whoever they know will solve that problem
>
> AS6- Well! We work differently, right? When you have someone who's been working for many years. You feel confident that a person who's got much more experience than you … and well, you can feel confident that if anything happens, you know that person will deal with the problem and will do it right.

From the quotations above, the main experts' attributes that emerged were responsiveness and appropriateness of response, in short competence. It indicates the preference for working with people more experienced than oneself; in addition these people were also humble and hardworking. Data presented below indicated experts' characteristics including the use of intuition, know-how, integrated knowledge, and their need not to consult protocols so often.

> MS4- … And you were never told … you arrive in the morning and they say, 'Oh! What luck that it's you' … It's not the years but the years with you
>
> MS3- They know you, know how you work … It's the time they've worked with you and the knowledge they have about your professional approach … Depending who it is, when admitting a patient, they say 'Carry on as it's serious, I'll be along soon'… And some people won't let you into the box until the patient has been seen. It depends on your confidence in this person and not on age
>
> NS1- The truth is that the protocols were made many years later, long after we knew the job inside out … protocols so internalised, that we didn't realize we were working with protocols

Experts' nurses recognised the value of autonomy. It allowed them to select the most appropriate care, assuming and taking accountability. In addition to autonomy, it highlights that expert nurse enjoyed care, they were not afraid of hard work and also in spite of their knowledge they were modest, listened to peers, were flexible and were always willing to collaborate. Responses from expert nurses quoted below illustrate those themes and their perspective.

> NS4- It's not an original reflection, right? And so I think that we apply intuition in many things. I mean to say, even in the patients' phrase ... pain... how am I?... not like... ? You understand?... And how often they make a … an intuitive or subjective assessment ... 'I don't like this patient'... How often? And when the doctor says, 'You mean?'... 'Look... ' Right?
>
> AS2- Modesty. Well! I'd look for someone whose knowledge was higher than mine and hard worker

The example given by AS2, an expert nurse, demonstrated one essential features evident within Magnet hospitals, namely 'working with other nurses who are clinically competent'. This was recognised as the more significant factor when correlated with the ability to give quality care, as well as perception of adequate staffing and job satisfaction. 'Competence is the baseline for respect, empowerment and autonomy' (McClure & Hinshaw, 2002:30). Competence (AS5) respect (AS6), empowerment (NS1) and autonomy

(MS3) can be grasped from the nurses data in addition to recognition (MS4) and expertise (NS4).

8.7.3. Teamwork

As discussed in the previous section, nurses' individual characteristics had an impact on teamwork. 'Teamwork' was a guarantee that all the patients' needs were covered and, as AS2 experienced, assertiveness, and negotiations skills will be more successful if people know each other. According to Benner *et al.* a large area of invisible nursing work lies in team building (Benner et al., 1999:426). The next quotations represent a clear reflection of the work necessary to team building.

AS2- I think the afternoon team gets along well. Obviously each one is different, some are good at one thing, but not so good at something else ... at different times, but I think we get along together as a team ... We don't have ... We have our own patients but that doesn't mean the others will be neglected just because their nurse is doing something else or can't get to them ... We need to work in this way, otherwise, things won't work out right

AS1- And we work a lot as a team and you can immediately count on the others. I mean, if you need something you can count on the others and that's important.

AS6- And that means also ... who … who you're working with, right? Many times, if I don't know something, depending on who I'm working with, it's harder to say it, right? … I may say something stupid and they give me a dirty look or laugh at me ...

Nurses considered 'teamwork' as a guarantee of quality and safety of care (AS2), based on trust and respect (AS1 and AS6). The quotation below highlights the importance of each member to facilitate teamwork (RN1). For that reason teamwork may be affected by nurses' turnover which became a key element to ensure teamwork.

RN1- Let's see, there ... there's a bit of everything. I think it depends very much on the people, right? There are days when, depending on who ... right? … who's there... that who's on duty that day work well as a team. If one of those who's very fussy, meticulous and such gets to work with a colleague who isn't so particular, then they work more individually.

Nurses were the ones whose presence with patients was more constant, meaning that they were able to detect their needs in a timely manner. 'Teamwork' was essential to improve patient outcomes as was clearly stated in MS1's quotation. This nurse in the morning shift, who had been working for years on the night shift, described that sometimes they had to make decisions on their own to relieve patient pain. This occurred more frequently during the night shift than in the morning one. This is reflected in MS7's quotation on never being ignored at work, meaning and assuming that in the morning shift it is possible to work as a team.

MS1- Really? At night we administer the analgesics at our own risk
MS7- Never. I've never been ignored. I've always attended to and they've always given me something

It was interesting to note that the patient and their family were considered as a member of an ideal team with the same shared objective, improving patient well being

and comfort (RN2). In this excerpt below it is also possible to identify elements from collaborative nursing practice such as team structure in which roles are clear and team goals are agreed. Moreover it highlights the importance of leadership to develop teamwork and the need to look for common spaces to reach collaborative health care practices that facilitated better patient outcomes.

> *RN2- Sure, everyone has different care ... I mean, everyone has a task ... so to speak, and I don't know if I'm using the right words, and specially -------------- better. Each one has a different task, right? But the aim is the same, that's very clear. The goal of our work, overall, is the same ... The thing is that everyone has … you know … has different roles, but nobody is independent ... nobody is independent. And we all get together ... and ... all of us are talking: doctor, family, patient, nurse ....[…] There's the fear that they don't share their pain... Well! Now for pain... whatever..[…] It's not bad. Could be much better. I think there should be much more teamwork ... much more teamwork, it should be... like that ... I think it would be much clearer than ------- the way of working with the patient … The team relationship would be better if this... if there was this... . if... if there was a leader who'd try ... try to minimize problems instead of... making more, right? And it'd also be better with the doctors. I think... I think it's absurd not to have more... more... some exchange meetings.*

8.8. Making Sense of the Outcomes

'Making sense of the outcomes' emerged from the nurses' reflections on what aspects of nursing care nurses considered to influence patients' outcomes and safety in a HDU. Analysis revealed that 'incidents and tasks left undone' may impact directly on patient safety while characteristics of 'practice environment' such as relationships and communication came out as a reference to assure quality of care and to guide patients during HDU admission. As discussed in the previous section teamwork became as essential impacting variable on the quality of care, safety practice and to promote patient comfort.

8.8.1. Incidents and Tasks Left Undone

Incidents were considered as those occurrences that could have led to undesirable outcomes (Agency for Healthcare Research and Quality, 2007a). From the nurses data it was possible to identify incidents associated with patients, individuals, communication, and organisational factors. The two most common diagnoses and interventions in studied patients were patients with acute coronary syndrome who required the placement of a stent (haemodynamic unit) and patients with digestive tract bleeding in which endoscopy was performed in the HDU. The length of stay (LOS), ranging between 1 and 3 days. These patients, during HDU admission although the period was very short, required close monitoring by experienced nurses able to anticipate and manage a crisis in addition to provide attentive and timely responses to the patients' needs in order to avoid fatal incidents due to alterations in the patient status. The next quotation highlights that

patient turnover (some patients' expend few hours or 1 or 2 days in HDU) and they critical health status, are considered by nurses as contributory factors to patient incidents.

RN1- Yes. You know what? That here ... let's see, there are patients who need it, but there are also patients who stay only a very short time ... Of course, they come and they go ... and they leave the hospital ... because with these angioplasties, we have many more patients coming and going... They're here for a few hours and then they go

Other patient incidents contributory factors were related to individuals, communication and organisational factors. The quotation below gives an example from practice of how to avoid a medicines administration error. MS1's quotation makes explicit the importance of the individual's nurse characteristics to overcome such incidents.

MS1- Ok, I think one of the things we do is that we have a global vision of the patient, right? So, you can be many things and influence things ... such as the home treatments that are temporarily suspended and that they restart thanks to the nurse's observation ... of saying, 'Hey, this patient had such, why don't we restart it?' I think one thing we do is this, we have a broader and more global vision of the patient

Nurses referred to the process of avoiding such inadvertent inconsistencies across transitions in care by reviewing the patient's complete medication regimen at the time of admission/transfer/discharge and comparing it with the regimen being considered for the new setting of care (Agency for Healthcare Research and Quality, 2007a). Nurses' views and interventions contributed to patient safety. The quotation below describes how nurses try to avoid a medication incident due to manual medical prescription.

AS1- The charts have to be checked a lot, because people leave lines to be completed out for medication. Right? When it's been agreed that the charts are done at night, right?... the lines and that, right? Well ...

Lack of psychiatric medical prescriptions emerged as an important issue for those patients who required this type of medication. This had an impact on patient comfort as without such medication patients were confused, as well as on safety and outcomes.

AS4- I think that what's wrong here, which is not our business, is that there are many disoriented and poorly attended patients ... because if ... you know? Well, disoriented or psychiatric patients ... If you don't give them X whatever ... because it's difficult to prescribe them medication, whatever, sedatives or whatever... Sure, it's a fight... You must finish off ... hands, feet, chest ... And it can even be worse... And there's no way to make them understand that …
AS7- He's disoriented ... what's more, he's not been given medication by the psychiatric hospital

The fact that sometimes psychiatric patients were disoriented as well agitated, because they did not receive their medication regimen at the hospital because there was no prescription, may lead to significant incidents. It can also start a debate amongst the nurses on the use of physical restraints for the safety of the patient and their inappropriate use because the patient could become more anxious, confused and combative, in short, less comfortable and unsafe.

Family taking part in patient care may benefit or harm the patient. Involving family in care giving activities specially to support these situations sometimes could be helpful but in contrast in some others could promote complications such as reflected in AS6's quotations.

AS6- He says, 'Can I bring you a coke?, I say, 'No. Things like... coke ... no... whatever... '. He says, 'I'm going to the machine, I'll bring you a juice ... one of those juices'.. 'Oh! Great!', and then, when you go in the room, you see a Fanta, and you say ... 'What's the Fanta doing here?'... 'There wasn't any juice, so I brought the next best thing'... And you say, 'What?'

Incidents were linked to the underlying system instead of to the actions of individual healthcare staff, although the importance of individual characteristics has been mentioned previously. To prevent medication errors it was helpful to look at what was wrong in the system which may lead to an error. Furthermore, as the nurse in the morning shift suggested, to increase patient safety and quality of care it was necessary to review nursing practice and to identify factors contributing to different types of incidents in order to improve care processes.

MS2- ... there are ... people ... The nurses don't face the fact that they can cause iatrogenesis ... I think we do this ... And we do it in very specific cases, I can tell you ... because ... You arrive in the morning and find the blood pressure cuff in place, and the arm is sweaty and timing is strict, you have a schedule ...[...] Electrodes are doing well, attaching well, but they have to be changed every day because the paste causes blisters ... I mean, you remove them and there are blisters ... on the ... on the skin. And then those peripheral catheters that have to be changed more often or watched, because here are many ... I mean...a bit of contrition, as professionals we could improve ... Not to say 'Oh! That's bad, we're so bad at our job'... No ... The three-step keys are very good ... very good, but they must be changed or ... else it's a source of infection, eh? the ... these plugs that ... nobody changes...

Communication between nurses also emerged as a key element to avoid incidents. The next quotation illustrates that after a reflective communication about patient medication nurses detected and avoided medication errors.

MS1- she took over from me, asked whether a patient had to take ... spironolactone ... for diagnosis, diuresis, for ... whatever... it wasn't prescribed ... We decided that it was probably a mistake because the patient in the next bed was taking spironolactone ... Even though it was a different dose ... And we thought it was a transcription error ...'it was a confusion between patients and I've prescribed to a patient I shouldn't have.' We didn't let it go, we checked and were told not to give it ... I mean, that ... probably could have been computerized and the error would be still there, right? ...

Worries in relation to clinical judgment and timely response were frequent. It was critical to think more carefully before acting and to update knowledge, but this was not always the case. Managing deterioration was crucial in making a difference in patients' outcomes; how decisions were made, timely responses, situations of power inequities as well as difficulties in communication and relationships may lead to situations with a heavy emotional load, as the following quotations illustrate.

RN2- I think we think... we think very little. I think sometimes we act too automatically when we face ... things. They might be simple things ... It's true we... we consult few books and consult very little ...We aren't trained enough, and we don't ask too much of ourselves to be trained enough. This also has something to do with leadership...If you feel supported ... you get involved, right? ... In the relationship ...

this is … dangerous

NS1- The things that worry me now... .. is above all the ability to work... in emergencies. I mean, saying... down there I had in my head where things stood. And when I ran, I did it in a direction I knew it was. And now I waste much time, because I can't think straight...

NS4- If, let's see ... not always ... let me see, sometimes it's not the outcome ... Poor man! He came out of it well, but apparently it's also been a success. But you know what you did, you did well. The feeling is different. Sorry for the patient, but, as work done, I mean it's a feeling of being ... that you did the right thing, what you had to do, although sometimes the outcome is ...

The reason little training was available seemed to be related with the type of leadership and the power relations. Other difficulties were the barriers that structure had when a timely response was needed and the heavily emotional load when responding to an incident. When nurses pointed to types of interventions (MS2) and possible tasks left undone, nurses referred to interventions to enable patient comfort. However, AS7 indicated that because of teamwork there were no tasks left undone.

MS2-…all the interventions to preserve what has not been compromised (by the illness), so we do everything ourselves … patient mobilisations …

AS7- I think that what she says ... for example, ehh ... I've no idea … if I have a lot of work, I have to take care of my patients, straighten their beds or whatever, or do a cure and I can't, and what to do ... and I send AS5 and AS6, and if I send them, I have to trust them to do it.

8.8.2. Practice Environment

Relationships and communication were identified as a key theme within practice environment. This subsection is related to teamwork because elements in practice environment constitute the basis for working together to achieve a common goal which in short is teamwork. From the nurses' data it was possible to establish a set of four common communication and interactions / relationships within the HDU. This set consisted of nurses with patients, with families, with other nurses and with physicians. Furthermore to increase patient safety and improve quality of care, this category, according to the nurses' data extended to relationships and communication between the hospital and primary care. Effective communication, the active process of relating to individuals and groups, is essential to ensure competent and safe practice but depends on the level of trust in the established relationships between everyone involved. Communication included verbal, non verbal and written. Although in the previous section the influence of written communication in incidents was discussed, the quotations below focus on verbal and non verbal communication.

MS6- No … that you end up talking to the patients … I mean, I think ... for me it's more accessible ... I mean I have no problem with talking to patients … you always end up getting information from the patient and communicating well with them, right?

MS4- No … But I mean to say, it's just that, right? You need to talk about something else to avoid thinking 'I'm here like this' ... This woman is looking at me, you know? ... I don't … don't know her.' And there are others that, yes, they need to tell you about their life, their concerns ...

MS5- The patient limits how far you go when talking

Any time whilst caring for a patient can be adequate to establish a relationship and communicate with them. Good communication and relationships allow the patient to feel comfortable, but it must be take into account that information delivered depends on the patient's need to communicate and interact. Relationships and communication established between nurses and patients have implications for their health status and well being as MS1 nurse indicates in her quotation. Communication skills allow nurses to give empathy and comfort while caring (Sully & Dallas, 2006:49).

> *MS1- And some are more glum or less friendly . I mentioned it just now with ... eh? in the changeover ... That depending on the relationship you have with the patient, if it's more open, is good and friendly, the patient ends up getting on better too, right?...*
> *RN2- I mean, they chosen to trus you and tell you. I think sometimes... . and I'm sorry for this... this... But sometimes talking to the patient you learn a lot .... Now... the physicians... a lot of thing are diagnosed in tests, right? I think they've forgotten about touch, listening, smelling and all that. I think we often lose a lot of information. And talking with patients sometimes, wow! … It gives you the gist of what has happened and when. And ... for me, as I say ... it's crucial for the patient. They feel safe, they feel... inspired with trust. They can explain many things to you … that sometimes they feels very uninformed and ... I try, you know, the more communication, the greater the trust*

Reliable evidence suggests that when physicians and nurses have a relationship of trust, this positively impacts on patients and on collaborative practice (McClure & Hinshaw, 2002). It also highlights that errors can be reduced and clinical judgment improved when communication is clear leading to pooling and comparing the wisdom of clinical experience (Benner et al., 1999). The quotation below (RN1) allows reflection on relationships and communication because of its relationship to teamwork. When team members knew each other, were competent members and demonstrated a unified commitment, it was possible to generate a collaborative climate based on trust. In addition, high nursing turnover, in addition to HDU experience, shift work, age and gender, may have an effect on the ability to effectively establish good relationships and communication, as MS9 outlined. This type of relationship had to do with working time spent together. However there were positive and negative aspects to this. Working with people you know and with whom you have good communications could facilitate the process of care as well as professional trust. It was clearly a matter between people and sometimes nurses did not feel satisfied with physicians' communications and relationships.

> *RN1- ... enormous [trust], isn't there? Not with everyone, eh? But I think there are people who trust each other a lot, from the nurse to the doctor and from the doctor to the nurse ... Enormous [trust], I mean... If this nurse tells me this ... then it's this. We should be sure where it comes from, but if the nurse tells me that at a certain point this patient's done something, I believe her although I haven't seen it. In general, I think they have a good relationship, specially with the regular ones. Now we have more people who haven't been here so long, and well... a bit different, so there's... well, a cordial relationship and we get by.*
> *AS7- ... although there's a lot of work it's done in a particular way or ... or we speed up because it's chaotic ...all at once ... all … depending on the doctor on duty.*

MS9- I miss it … when they come and you're really having a lively discussion, they're listening to what you're saying. One thing is that they're then wary or what I do or do not do and they monitor what I've done and what I have left to do, but in the human aspect, of … of … if I am worried about my patient, I say … don't look at me like that … you know?

Within relationships and communication it was important to highlight the fact that the continuity of care would be more assured if there was fluid communication between the hospital and primary care. Within a holistic approach nurses attempt to maintain the continuity of care however sometimes there are conflict situations. Concerns for care failures in relation to patient treatment in primary care could produce incidents while in hospital. When treatment was not delivered in hospital it could lead to situations of confusion with the consequent risk that entails for the patient and other patients in the unit.

MS9- Communication also with the primary care centres that don't … I don't know if … all the … patients with many chronic illnesses, if you have … if you had the history of primary care centres in the hospitals … if there was more communication we could also … all the medication administered … when the process becomes acute, to do everything as it was before

According with Phaneuf (1996:11-13), one of the main nursing competencies is the nurse-patient relationship, which is based on the professional capability to establish a relationship that is warm and adapted to the patient's condition. To do this, nurses identify three levels of communication, functional communication that facilitates, clarifies and provides efficiency exchange; pedagogical communication provides knowledge about the prevention of illness and its treatment, and therapeutic communication that allows for significant ties in the relationship, which manifests itself as acceptance, respect, warmth and empathic understanding. This structure should serve as a guide to identify where there is a communication problem and the different consequences of the lack of information produced as a function of the levels of communication. The next quotation from RN2 shows the different types of communication and their importance.

Therapeutic communication (with the patient and relatives):
RN2 -… A moment ago he didn't want anything and now he's in pain and everything's wrong with him, right? That's because his family needs this and... and also... and, of course, they must see what can be done for him and they need ------------ there isn't anything that the poor patient... scared to hell there … hadn't... hadn't expressed it, right?...

Functional communication (when to tell the doctor and inform the patient of the solution):
RN2… I think a very important, very important thing … because it seems there's no other way... is the sensitivity [for a nurse] to tell doctor what... ehh... Then, when he expresses it, another... another... very important issue is to channel the solution…

Pedagogical communication (with the patient):
RN2… And it's in this case... it's... being informed, we must inform... If... what he's expressing is suffering, we try to relieve it or find the means to reduce it. I mean, it's responding to what the patient... I think the most important role we have is this, to be a channel ...

Sometimes functional communication failed specially during the night shift a fact that may jeopardize patient safety and quality of care due to misinformation as it is illustrated in the next quotations.

NS3- Yes, but, for example, who changed the defibrillator and didn't ... you know? And no one knew how it worked... and no one knew how the external pacemaker worked ... And so we didn't know anything

NS6- This is a drawback of the night shift, learning and new things, the lack of information is worrying

8.8.3. Promoting Comfort

Promoting comfort requires a specific nurse's attitude i.e. a concern for the patient, which is linked with the governing values discussed in section 8.7. Concern for the patient explained why when an advanced beginner nurse worked for the first time in the HDU, the expert nurse as it is reflected in the NS4 and RN1 quotations below, organised patient allocation to make sure that the advanced beginner nurse will take care of the less severely ill patient while the expert will take care of the more acutely ill patient, in addition to overseeing and supporting advanced beginner nurse's work.

NS4- The other thing's absurd, because if I give them the more difficult patients, I'll also have to see those patients and mine. It's easier to give over the easier patients, so they can get on with it, and I properly devote myself to the rest. Now, that doesn't mean, like once, not long ago, we had a substitute so-and-so ... And a patient who really was easy, ended up intubated, because we're in a unit where this ... can happen…

RN1- Well, you.. Introduce them ... They come on ... Then, well, indeed, what the nurse does ... . Usually you assign them someone who ... coaches them a bit, right? Who does a bit of ... And then, sometimes, there's some reorganisation ... this is always done, the patients are reorganised to see which patients will be given over to them

This attitude, concern for the patient was linked to the aim of promoting patient comfort ensuring safety and quality care was provided by expert nurses to the more severely ill patients. Many advanced beginner nurses implied that expert nurses' experienced work overload due to the supervision that they provided to advanced beginner nurses. AS3's quotation presents the advanced beginner's perception, as she is a nurse with less than one year's experience of working in the HDU.

AS3- I ask a lot. Anything... yeah ... any doubts I have or that I don't know ... so I ask and I'm lucky in that they know the answer

The ratio between advanced beginner and expert nurses in the HDU affected the support that the expert nurse could provide and had an impact on safety and quality of care, in addition to capacity to promote patient comfort as is illustrated in the quotations below.

AS7- There has been a fact .. We had a lot of new people all at once and suddenly you feel a bit bad because sometimes you can't be there for them as you should ... and what to do? ... Whoever's on duty, for example, wants it 'right away' and wants you to do it

AS2- You say.. OK, it's true that this person hasn't got the same workload as me, but this isn't … you can't … as I don't know them, I ignore them. No… it makes no sense. Either … you're doing something for your patients, you have enough to do with your own patients, and they come and... and 'Well.. now go to see to the other end, see that the other one has done it properly'.. Look …

In contrast to the concern for the patient from the expert nurses, some attitudes of advanced beginner nurses came to light which prevent 'enabling patient comfort' MS1 describes below.

MS1- OK, but taking advantage of the fact that you're still there ... Well, I think ... Let's see ... it's true, right? … what they say about the ... the instability of staffing and that we have many young people ... But I would add one thing here ... one factor ... it's a problem of generational attitudes ... Yes ... OK, I don't know but ... I'm very demanding lately ... I think I've always been but now it's quite a strong feeling ... There are attitudes ... of the people now ... young people today ... and we have already discussed this with [some colleagues], right? ... They have no desire to learn as we did before, some years back ... They're relaxed, they don't care if they're in HDU or ICU ... if there's a TV or not ... it ... no problem ... we're not concerned, we're doing ... I'm shocked. I've seen people who recently finished their studies, everyone new ..[...] And you see them playing on the computer at 7 in the morning and fourth ... you say 'But what the hell are doing here? What are we playing? ', Right? I say 'ei! You just finish the studies ... You have heard that you have a patient who is really bad ... What are you doing here, not ?'... I mean, I think it also would add a little ... the quest ... Not everyone, eh? Not everyone ... But there is a problem of attitude, right? ... Ok, no? Never mind that if you are apples potatoes ...

The situation described in this subsection was aggravated by several causes, the most relevant being nursing turnover (due to instability of staff) and many young people with different attitudes compared to previous generations of nurses educated prior to the internet era. Some young nurses have a less proactive attitude to care and they were using computers for their own interests.

The promotion and the experience of comfort were created based on individual nurses' attitudes, skills and knowledge. To ensure high quality patient centred care, individual nurses' attitudes, skills and knowledge must be oriented to promote comfort.

8.9. Chapter Summary

This Chapter has provided the detailed findings from nurses' data analysis which aimed to address the following research questions: 'What aspects of nursing care do nurses perceive as influencing patients outcomes and safety in a HDU?' and 'What do nurses perceive as the outcomes of nursing in a HDU?'. In this summary section Figure 8.3 presents the components of the full, final integrative diagram to answer the study questions, including the categories and their sub-categories, a description of the components and the links between them.

Analysis revealed four categories on which 'enabling patient comfort', as an aspect of nursing care, was based; the first three 'adapting to the context', 'facilitating strategies' and 'powering elements' constituted the guide to answer the first question. In relation to

the second it was necessary to make sense of outcomes to illuminate the second study question. HDU structure, characteristics and organisational issues may promote and prevent aspects of nursing care that influenced patient experiences. More focused on aspects of the process of care, accountability and advocacy were essential features for nurses, as well as the power of individual nurse expertise on teamwork to influence patient recovery. Nurses stated that 'knowing' and 'informing' patients, 'being with' and being sensitive as well as 'Keeping calm and instilling confidence' are key 'facilitating strategies' to obtain a safety environment and promote positive patient outcomes. The ability to generate this environment depended on patient characteristics, but especially on how these strategies were applied. Strategies used by nurses were interventions that aimed to enable patient comfort to help the recovery. Aspects included 'adapting to the context', this assisted the dynamics and the process of care in which 'facilitating strategies' and 'powering elements' were applied.

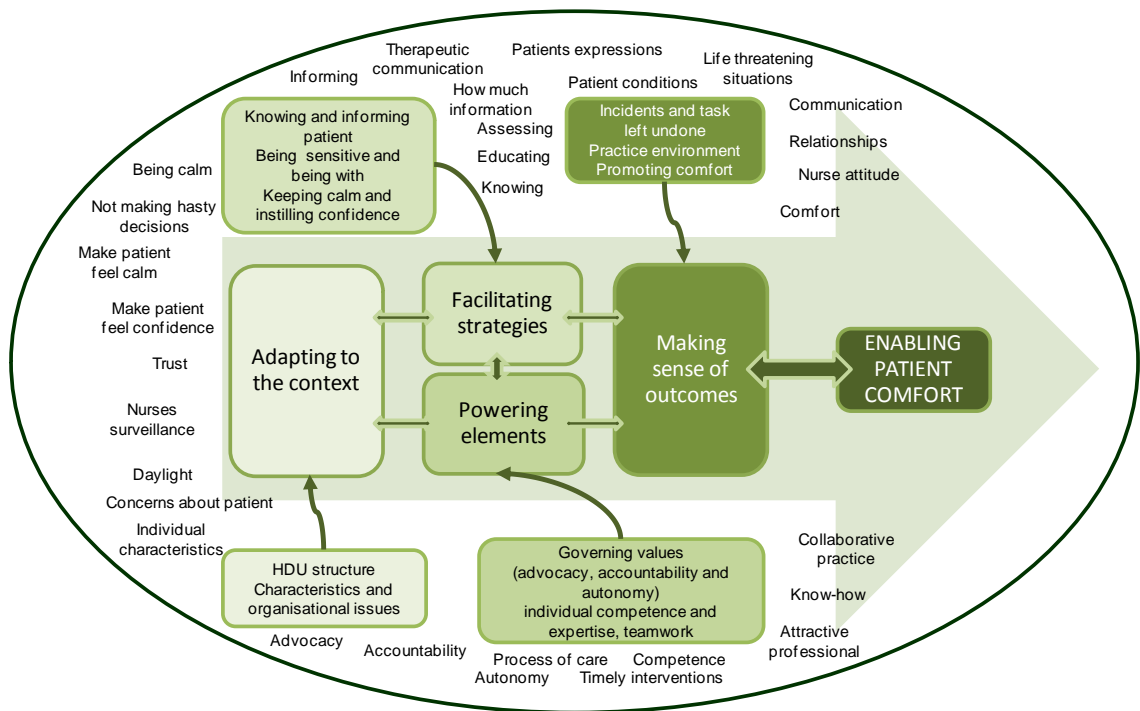Figure 8.3: Components of the Final Integrative Diagram

Expert nurses advocated that patients were given an explanation of their condition and provided information in accordance with this explanation. 'Being sensitive' belonged to the field of therapeutic communication between nurse and patient. Due to the fact that the nurse knew the patient's situation as well as how to control risky situations patients

were likely to feel calmer and feel confident about nursing care which might then trigger adaptive mechanisms that benefited them while enabling comfort.

Accountability as well as professional judgments were concepts implicit in autonomy and furthermore were aspects that influenced the process of care and as a consequence patient outcomes and safety. Data analysis showed that the contributions made by expert nurses, who used intuition, had knowledge integrated with practice and 'know-how'. According to Benner, expert nurses 'performance no longer relies on an analytic principle to connect her or his understanding of the situation to an appropriate action' (Benner, 2001b:31). Expert nurses quickly generate an appropriate response in a timely manner because they focus on the problem and do not waste time evaluating other possibilities. This was one of the reasons that make them attractive to other professionals and why they are valued.

In response to what nurses perceived as the outcome of nursing in a HDU, this was implicit in the nurses' discourse. Features perceived as an outcome have two main characteristics, the first one was related with timely measures and the second with the lack of the features when nursing interventions could not be classified as a safety and quality ones. Outcomes to be considered were perceived immediately within the shift; the consequences of inappropriate actions may range from a lack of comfort to a life threatening incident. 'Making sense of the outcomes' becomes the link between the theoretical and the core category.

These findings suggest that 'enabling patient comfort' has the potential of being a fundamental process to promote positive patients outcomes. 'Enabling patient comfort' refers to those processes and behaviours that allow placing patients at the centre of care, becoming the focus of nursing care by means of nurses' interventions related with informing, assessing and educating patients with the aim to facilitate comfort whilst in HDU. These findings can outline potential causal mechanisms that link nurse staffing levels and skill mix to issues of patient safety and patients' outcomes as well as illuminate a new approach to identify and understand the essential process variables that link nurse staffing and patients' outcomes. When analysing communication, the importance of facilitating patient understanding was revealed, in addition to acting as an advocate for the patient with the rest of the team or health professionals. Incidents and teamwork are directly related with communications and relationships; the data suggested that good communications and relationships reduce incidents and, moreover, promote teamwork.

The next Chapter presents an overview connecting all of the studies findings explaining the structure and process variables related to nursing, aspects of nursing care that patients and nurses perceive as influencing patients outcomes and safety, as well as what was perceived as an outcome of nursing practice in a HDU.

Chapter 9
Discussion and Comparative Analysis of the Studies

9.1.   Introduction

The purpose of this PhD is to explore and clarify the complex process of caring in a HDU setting with the focus on what are the nursing structure and process variables that influence patients' outcomes and safety. The process of caring is complex not only because in this context patients need critical or life-saving care, but also due to the life threatening consequences that 'poor/sub-optimal' care may have; this is one reason why exploring the impact of nursing care on patients in a HDU setting was chosen, over and above other possible healthcare settings. As discussed in earlier Chapters, nursing is a health profession that plays a leading role in meeting patients' needs, with 'caring' at its essence. It involves a multifaceted mix of personal care, human compassion and technical skills (NHS Scotland, 2005), which takes place within the context of a therapeutic relationship engaged in the provision of physical, emotional and social support to meet patient needs (Llewellyn & Hayes, 2008:5).

The intention of these last two Chapters (Nine and Ten), divided into a number of sections, is to make sense of the data. Hence in Chapter Nine (sections 9.2 and 9.3) the findings of each study are considered independently before they are considered together (in section 9.4). Section 9.2 is a classic discussion of a quantitative study, in contrast to section 9.3 in which Study II patients' and nurses' findings are discussed separately (sub-sections 9.3.1 and 9.3.2). Sub-section 9.3.3 explores the emerging theoretical model based on the analysis of patients and nurses findings together which allows the construction of the 'Substantive Theory of Patient Adaptation through the Promotion of Comfort'. This theory is discussed and contrasted with previous literature findings. Section 9.4 considers and interprets the findings of Study I and Study II as a whole which with the contribution of patients' and nurses' perspectives constitute the added value of this PhD research. The achievement of this whole is possible because both studies were performed in the same HDU setting, during the same period and shared patients and nurses as study participants.

The findings from Study I are related mainly to how some nursing structure variables influence patient outcomes and safety. When those findings are considered along with Study II findings, which are related to the process of care per se, it is possible to gain understanding of how structure impinges on patient outcomes and safety and a greater of

understanding about the process of care about how nurses do what they do. This helps in clarifying the interrelationships between the three groups of variables, structure process and outcomes.

To complete this Chapter, section 9.5 summarises the key points and discusses the argument. It will be argued that outcomes of nursing practice may be understood as a rich interaction between patients and nurses, centred on and bringing about an adaptation process oriented towards and through the promotion of patient comfort. While identifiable sequences to the patient adaptation process are evident, these are not necessarily independent phases, because many were found to occur simultaneously and to interact during the whole of the patient's admission. However, for analytic and explicative purposes, the process of patient adaptation through promotion of the comfort is described as a succession of events.

9.2. Understanding and Discussing Study I Findings

The aim of Study I, a prospective observational design, was to identify the structure and process variables related to nursing that influence patient outcomes and safety in a HDU. After a brief analysis of patients' and nurses' characteristics, the four hypotheses derived from the study aim, grouped according to nurses' structure (hypotheses one and two) or nurses' process (hypotheses three and four) variables, are used as a guide to present and discuss the meaning of the findings.

The sample for the research study consisted of 501 patients admitted to the HDU of the *Hospital de la Santa Creu in Sant Pau in Barcelona* (Spain) and all of the 66 nurses who cared for these patients during the 3 month study period. Patient demographic factors included age, gender, type of illness, Charlson Comorbidity Index, cardiovascular diseases and risk factors. Also included were patient's location prior to admission and at discharge, nurse shift on admission and at discharge, in addition to ICD-9 at discharge. Nurses' demographic factors included age, gender, professional category, work situation, nursing educational level, length of time employed expressed in years, in hospital (hospital experience) and in HDU (HDU experience), and professional level.

9.2.1. Hypothesis 1 and 2: Nurses' Structure Variables Influence Patients' Outcomes (1) and Safety (2) in a HDU

Nurses' structure variables under study were age, hospital experience, HDU experience, work category (registered nurses), work situation (permanent), education (higher degree), HDU education (higher degree in CCP[19]) and nurse turnover. Patients' outcomes considered were mortality, failure to rescue, readmission and pain while patients' safety incidents under study were nosocomial infections and type, falls, medication errors, pressure ulcers, surgical bleeding, blood transfusion events, drug event and life-threatening situations.

9.2.1.1. Risk of Death and Failure to Rescue

All nurses' structure variables influenced the risk of death and failure to rescue. These PhD findings estimated that the risk of death and failure to rescue was reduced by 32% and by 13% respectively for each year of increase in nurses' hospital experience. Contrary to these reductions in the risk of death and failure to rescue and although the nurses sampled in this PhD study shared the same mean years of experience (14 years) as the sample in Aiken's work, nurses' hospital experience was not found to be a significant predictor of mortality or failure to rescue in the Aiken full models (Aiken, et al., 2003). Likewise Cho *et al*. (2008) reported no significant difference in the relationship between nurses' hospital experience and patients' mortality or failure to rescue. Furthermore when Tourangeau *et al*. (2007) analysed risk-adjusted 30-day mortality rates, they found that these could be explained by eight predictors, but not nurses' hospital experience.

In this PhD, the impact of educational level shows the same trend as nurses' hospital experience. However the consequences of findings in Study I are greater when compared to the results reported in the literature for surgical patients in general wards (Aiken, Clarke, Cheung et al., 2003). For medical patients, Forster *et al* (2005) observed no impact on patient mortality with the addition of a specialist nursing education (master's degree level). Aiken *et al*. (2003) suggested that nurses' hospital experience must be understood as a confounding variable when considering clinical judgment and nurses educational level because both may have an influence. Day (2009:480), based on Benner's work, brings more understanding of the nurses' hospital experience variable by stating that '*the move away from reliance on abstract rules and consciously rational decision-making to an a*

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[19] CCP: Critical Care high degree

rational grasp of whole situations that characterises expert practice depends on experience and engaged experiential learning'. In short it may be understood as a question about the link between structure variables (nurse experience and educational levels) and one particular process variable (clinical judgment). Special attention should thus be paid to the analysis of both structure and process variables.

In this PhD study, nurse-to-patient ratio and staff skill mix remained unchanged, but although Study I is silent on nurses' process variables, it is important to highlight what is reported in the literature because both nurse-to-patient ratio and skill mix influence patients' outcomes (Needleman et al., 2002; Tourangeau et al., 2007). The literature review reveals that mortality was not related to night-time nurse-to-patient ratio in ICU surgical patients (Amaravadi et al., 2000) whilst a 9% increase in patients' mortality was reported for every additional patient per RN (Cho et al., 2008; Dowding, 2011). When considering skill mix, it was reported that a richer nurse skill mix negatively affected the predicted 30-day mortality (Estabrooks et al., 2011).

In Study I nurse turnover was calculated for every patient as the number of different nurses that take care of the same patient during each patient admission in the HDU, divided by patient's length of stay in the HDU. Exposure to high nurse turnover, defined by Needleman *et al*. (2011) as when the turnover rate was greater than or equal to the mean ± 1 SD for each patient, was significantly associated with an increased risk of death, but no significant association was found with failure to rescue. These findings could be explained because although the turnover observed in the HDU was high, nurses that covered this turnover were always the same nurses that mostly were familiar with the HDU and are experienced nurses. Moreover for nurses who worked for the first time in the HDU, permanent staff performed an induction that allowed them quickly to familiarise themselves with the HDU environment and with the work dynamics; this induction could facilitate the new nurses' integration to the teamwork which might explain the finding that the HDU turnover in Study I only impinged on mortality.

Study I findings were consistent with those reported in the literature for hospital settings (Needleman et al., 2011). In nursing home settings, a significant relationship between high nurses' turnover and poor resident outcomes has been identified in a systematic review which included eighty-seven research articles and government documents (Bostick et al., 2006). Similarly it was demonstrated that when characteristics of the nursing home staff improved, the residents' quality of care was enhanced (Castle &

Anderson, 2011). In essence in the light of these findings the key point is to analyse the causes of nurse turnover that could lead to problems with recruitment and retention and the challenges within the workplace environment leading, for example, to job dissatisfaction.

9.2.1.2. Readmissions and Pain

In Study I, it was also found that the risk of readmission decreased with increasing nurses' age and experience as well as when the nurses' work situation was permanent and they had higher educational levels. Moreover nurses' HDU experience and nurses' work category had a statistically significant effect in decreasing the risk of pain because nursing pain monitoring facilitates early intervention to control it. These findings are consistent with results reported in the nursing literature in which RN staffing levels with more years of experience (Clarke, 2007), higher educational levels (Aiken, Clarke, Cheung et al., 2003; Estabrooks et al., 2005, 2011) and a higher proportion of permanent positions (Estabrooks et al., 2005, 2011) are fundamental to meeting patient's care requirements and as a consequence influenced patients outcomes. No significant association was found between exposure to high nurse turnover and readmission and pain.

9.2.1.3. Patients' Safety Incidents

Nurses' structure variables influenced patients' safety in a similar manner to patients' outcome variables. Patient safety incidents analysed were nosocomial infections and type of infection, falls, medication errors, pressure ulcers, surgical bleeding, blood transfusion events, drug event and life-threatening situations. When considering nosocomial infections and type of infection, falls and medication errors, statistical significant adjusted model could not be built, due to their low incidence during the study period. Contradictory findings are reported in the literature in relation to the effect of nursing staff on nosocomial infections. On the one hand, night-time nurse-to-patient-ratio (Amaravadi et al., 2000) as well as RN hours per patient or RN to-patient ratio and skill-mix has demonstrated its impact on nosocomial infection (Blegen et al., 1998; Yang, 2003; Berney & Needleman, 2006; Unruh & Fottler, 2006; Cho et al., 2008); on the other hand, no relationship between structure variables and nosocomial infections was observed in several other studies (Kovner et al., 2002; McGillis Hall et al., 2004). Only a few studies reported any impact on patient falls when considering staffing variables (Dugan et al., 1996; Krauss et al., 2005). Furthermore some studies failed to demonstrate an association between both variables (Cho et al., 2003; Yang, 2003; McGillis Hall et al., 2004; Donaldson

et al., 2005; Lee et al., 2005; Unruh & Fottler, 2006). A great number of medication errors were identified for fewer nurse hours per patient day (Whitman et al., 2002) or a lower proportion of professional nursing (McGillis Hall et al., 2004) while no effects were observed when considering skill mix (Mark et al., 2003; Lee et al., 2005). These conflicting results only reflect the danger of trying to establish linear relations between two variables while failing to provide information on the complexity of the system under analysis, in this case medication errors which require a multidisciplinary approach to solving the problem (Williams 2007; Esi Owusu Agyemang & While, 2010).

The adjusted logistic regression model reported that all nurses' structure variables influenced the risk of pressure ulcers, surgical bleeding and life-threatening situations; it was estimated that the risk of surgical bleeding and of life-threatening situations decreased by 55% and by 19% respectively for each additional year of nurse experience. This finding adds to knowledge as this relationship has not been tested before. Donaldson *et al*. (2005) analysed the impact of mandated minimum staffing ratios, nursing hours of care and skill mix on the prevalence of pressure ulcers, in addition to the incidence of patient falls, but did not demonstrate significant effects. In contrast Shuldham *et al*. (2009) reported an increase in pressure ulcer incidence when considering the increase in nursing hours per patient day in a low dependency category wards. Similarly at the ward level, Twigg *et al.* (2011) observed an increase in pressure ulcers as a consequence of the implementation of a new staffing method based on nursing hours per patient per day; in this particular case, the change was in the percentage of RN nurse hours. These findings are most probably explained by the fact that these RNs could provide better detection of pressure ulcers.

Four of the patients' outcomes and safety incidents analysed in Study I were included at the hospital management level as a quality indicators for the HDU. These outcomes are pain assessment with the aim of improving patient comfort, expected falls, safe administration of blood components and skin injuries from pressure. The assessment of these indicators may explain the positive findings in relation to these outcomes, such as the strict control of pain carried out during each nursing shift, the very low incidence of falls or skin injuries or no adverse transfusion events.

9.2.1.4. Section Summary

To summarise in a HDU, nurses' structure variables influenced in patients' outcomes and safety as follows:

- Patients' risk of death and failure to rescue were reduced when nurses' hospital experience increases and nurses' had higher educational levels

- High nurse turnover increased patients' risk of death

- Patients' readmissions were decreased when nurses' age and nurses' hospital experience increased as well as when nurses' work situation (permanent) and nurses' education (higher degree) were in a higher proportion.

- Risk of pain was decreased when nurses' HDU experience increased

- Patients' safety incidents: the risk of surgical bleeding and of life-threatening situations was decreased when nurses' hospital experience increased

9.2.2. Hypothesis 3 and 4: Nurses' Process Variables Influence Patients' Outcomes (3) and Safety (4) in a HDU

In this section, the influences of nurses' process variables on patients' outcomes (mortality, failure to rescue, readmission and pain) and on patients' safety (nosocomial infection, falls and medication errors) are discussed. Key variables studied were the nurses' perception of the quality of care and of autonomy which allow assessment of the value of the process of nursing care per se for each nurse. It was estimated that the risk of death was reduced by 31% and by 35% respectively for each one point increase in the perception of the quality (Hinshaw, 2006:93) of care and of autonomy.

Not only the perception of the quality of care delivered but also the perceptions of nurses' autonomy while caring are essential elements to think about in relation to the process of nursing care. In this study, nurses rated their perception of autonomy as 6.6 and perception of the quality of care as 7.6 (maximum score=10). Lower values for autonomy were obtained in the morning shift (6.2) and for quality in the night shift-1 (6.3) whilst higher values were observed for autonomy in the afternoon shift (7.1) and in the night shift-2 (7.8) respectively. It is interesting to note that for autonomy the lower and the higher values were obtained in the day shifts while when considering quality this situation occurred for night shifts. When analysing the influence of nurses' process variables on patients' safety incidents the same trend as in the previous section was observed. When the perception of quality of care and autonomy increased by one point each, surgical bleeding risk decreased by 53% and 59%, and life-threatening situations by 37% and 42% respectively.

Nurse autonomy is essential to quality patient care. This is supported by a positive work environment, and has been cited as a Magnet characteristic in the original Magnet

Hospital study (McClure, 2002:15; Spence Laschinger et al., 2010). The defining attributes of nurse autonomy have been helpfully explored in two concept analyses (Keenan, 1999; Wade, 1999). In the former, it was argued to include caring, affiliative relationships with clients, responsible discretionary decision making, collegial interdependence with members of the health care team and proactive advocacy for clients (Wade, 1999); in the latter and from a broader approach, defining attributes of autonomy were seen as including independency, capacity for decision making, judgment, knowledge and self-determination (Keenan, 1999). Decision making would be the key element that can explain differences in patients' outcomes because like all choices clinical decisions produce some kind of outcome (Thompson & Dowding, 2009:3).

When considering previous findings in the literature, it was observed that if nurses take independent actions for patients' (autonomy), mortality rates were reduced. To understand the influence of nursing process variables on patients' outcomes and safety, it is necessary to focus on nurses' accountability and advocacy. Nurses are accountable for their decisions and this is influenced by their level of autonomy. Nurse advocacy and its role in promoting a safe environment is based on the statement that the nurse acts in a way that promotes the rights and interest of others, and thus she becomes a necessary way of ensuring others' voices are heard (Baldwin, 2008). In addition, it has been argued that when staffing levels are inadequate, safety may be compromised (Zolnierek & Steckel, 2010). The need to develop a theoretical basis to explain how this RN staffing levels might have this effect (Schmidt, 2010) is required, showing a map of the variables and understand their possible relationships as detailed in the next section.

Perceived lack of autonomy was reported by nurses in the HDU as a major source of stress and dissatisfaction. This finding is especially significant in the context of the wider literature which argues that accountability is the primary consequence of professional nurse autonomy; lack of autonomy could be a reason for nurses' stress and dissatisfaction (Pendry, 2007). While current literature has explored and demonstrated a relationship between structure variables and patient outcomes, process variables such as lack of autonomy are not often discussed or elaborated upon.

9.2.2.1. Section Summary

To summarise, in the HDU, nurses' process variables influenced patients' outcomes and safety as follows:

- Patients' risk of death was reduced when the perception of the quality of care and of autonomy increased

- Patients' safety incidents: risk of surgical bleeding and of life-threatening situations decreased when the perception of quality of care and of autonomy increased

To more fully illuminate the interplay between process variables and outcomes from the perspective of nurses and patients Study II, discussed in the next section, was carried out to obtain sharper and deeper understanding about the relationship between the nursing structure and process variables and outcomes of patients in a HDU setting; Study II findings are now discussed, firstly by summarising and discussing the findings from the two datasets, patients (9.3.1) and nurses (9.3.2), and secondly taken together and leading to the emerging substantive theory to assist in explaining nursing care and its influence on patient outcomes and safety (9.3.3).

9.3. Understanding and Discussing Study II Findings

The purpose of Study II which had an exploratory interview design was to develop a substantive theory to explain which aspects of nursing care influenced patient outcomes and safety and what was perceived as an outcome of nursing within a HDU from both the patients' and nurses' perspectives. The sample for this Study II was a selection of the 501 patients admitted in the HDU of the *Hospital de la Santa Creu i Sant Pau* in Barcelona (Spain), in short, the sample for Study I, and some of the 66 nurses who cared for these patients during the three month study period. Participants' meanings and understandings, reported in Chapters Seven and Eight, are embedded in the patients' and nurses' data which are discussed separately in the next sub-sections 9.3.1 and 9.3.2. Sub-section 9.3.3 give details of the emerging theoretical model developed via coding and category handling (Richards, 2009:166) undertaken during the combined analysis of patients' and nurses' findings which allows the construction of the substantive theory of patient adaptation through the promotion of comfort. This theory is discussed and contrasted with previous literature findings simultaneously.

To aid the summary and discussion of the findings from the patient and nurse datasets, an overview of the categories and the relations between categories belonging to this theory are displayed in Figure 9.1. This sets out the consequences of the interactions between the components of patients' and nurses' categories within each of Donabedian's Quality Framework dimensions of structure, process and outcomes. Classifications within each dimension may vary. The main categories are illustrated with the patients' findings on the left (9.3.1), the nurses' findings on the right (9.3.2) whilst the main category from the ' Substantive Theory of Patient Adaptation through the Promotion of Comfort' is located in the centre (9.3.3).
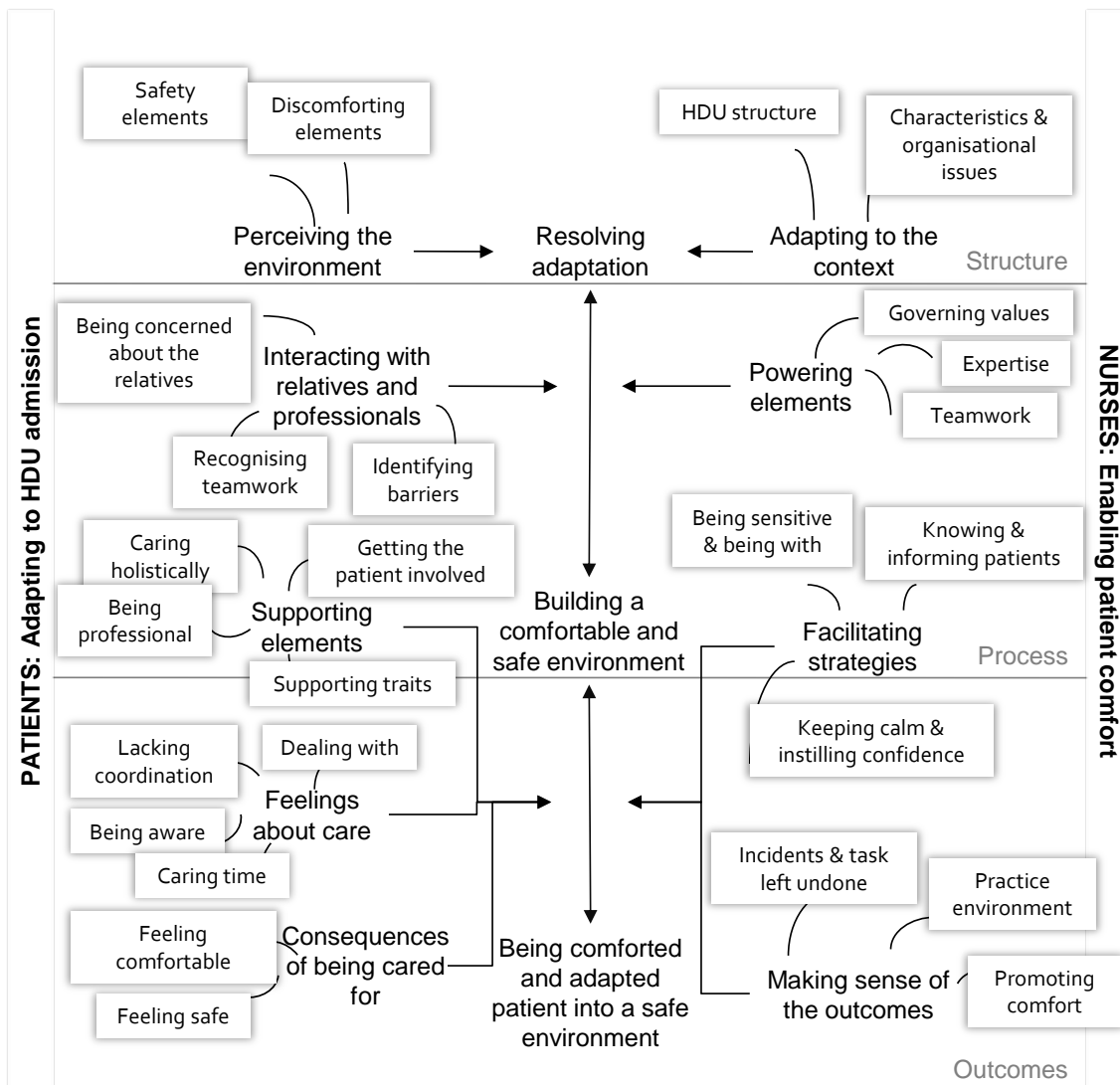

Figure 9.1: Consequences of the interactions between the components of patients' and nurses' categories within each of Donabedian's dimension of structure, process and outcomes.

As mentioned in Chapters Seven and Eight, for reasons of simplicity the sequence of theory description follows a linear representation, but in practice the relationship between categories is flexible and dynamic. In the same way categories under the structure, process or outcome label must be understood as depending on where the starting point for analysis lies.

9.3.1. From Patients' Findings: Adapting to HDU Admission

The left side of Figure 9.1 illustrates those categories that emerged from the patients' data sorted into each of Donabedian's Quality Framework dimensions with 'Adapting to HDU Admission' as the core category. 'Perceiving Environment' is within the structure dimension, 'interacting with relatives and professionals' and 'supporting elements' are within the process dimension and as components within the outcome dimension, 'Feelings about Care' and 'Feeling Cared For'. Based on continuous patient-nurse interaction during the whole HDU admission, these categories support the patients' contribution to the substantive theory.

For the patient, the starting point lies in the process of adaptation through the promotion of comfort. This depends first of all on her/his ability to deal with the new situation, but also on the type of interaction established with the nurse. Drawing on other research knowledge, the ability to deal with a new situation is a consequence of a need for and an openness to caring (Finfgeld-Connett, 2008). If patients felt that their needs were met, adaptation was being promoted and potentially achieved. The specificity of every patient's needs was reflected in their experiences during the time spent in caring. When considering this, special attention should be paid to how this time is used by the nurse; in short, according to the patients' data the key is to provide effective interactions with patients and at the same time interactions that help them to obtain comfort.

Caring entails nursing competence in the areas of knowledge acquisition, decision-making and execution of skills (Finfgeld-Connett, 2008). 'Feeling comfort' and 'feeling safe' were identified by the patients in Study II as outcomes of nursing practice. Alongside, 'caring time' and 'lacking coordination' were experienced by patients as missed care; missed care here was, interpreted as limited time being used to interact with the patient and a lack of coordination while caring. In her discussion of the concept of missed care, Kalisch (2006) identified that important elements of nursing care had been missed on a regular basis in an acute care hospital. Those identified included ambulation, turning, delayed or missed feeds or meals, patient education, discharge planning, emotional

support, hygiene, intake and output documentation and surveillance. The aspects of missed care identified from patients' data may contribute to poor patient outcomes. These were related with a low nurse presence and a lack of coordination, although these two dimensions might be perceived as having a of lower risk to patient safety and good patient outcomes than the dimensions reported by Kalisch (2006). Why, how and under what circumstances missed care occurs in the HDU forms an important area for future review and further research.

9.3.2. From Nurses' Findings: Enabling Patient Comfort

The right side of Figure 9.1 illustrates those categories that emerged from the nurses' data sorted into each of Donabedian's Quality Framework dimensions with 'Enabling Patient Comfort' as the core category. These PhD findings suggest that nurses' interventions under the label of 'supporting elements' included being sensitive, being with, knowing and informing patients, as well as 'keeping calm and instilling confidence'. All of these are within the process dimension; they were suggested as essential in order to build a comfortable and safe environment for the patient. These findings cohere with those from McMahon and Christopher (2011) in which potential beneficial client outcomes are identified, in particular, 'being with', related with the client helped, supported and comforted. Moreover, expert nursing, interpersonal sensitivity and intimate relationship have been identified as attributes of the caring process that promote patient outcomes such as physical and mental well-being (Finfgeld-Connett, 2008). Clearly these have common attributes with the PhD's core categories of adaptation, comfort and safety. For instance, taking 'facilitating strategies' as an example, it is possible to show that classifications within each dimension may vary. If the analysis begins in how 'powering elements' affect 'facilitating strategies' from the nurses' data or 'supporting elements' from the patients' data, both categories could be located under the process label, or as a consequence of 'powering elements', in short, as an outcome.

The next section describes the 'Substantive Theory of Patient Adaptation through the Promotion of Comfort'. Theory components are compared with those reported in the literature to find similarities and contrasts to the PhD findings and demonstrate the thesis's addition to knowledge.

9.3.3. Substantive Theory of Patient Adaptation through the Promotion of Comfort

This section aims to bring together patients' and nurses' data into a whole following the dynamic and non consecutive stages illustrated by the main categories one within each of the Donabedian's Quality Framework dimensions, starting from the 'resolving adaptation' initial stage until the achievement of the ideal final stage of 'becoming a comforted and adapted patient into a safe environment'. Each category is described along with the contribution of patients' and nurses' findings to the central explanation.

Figure 9.2 presents the components of this substantive theory of patient adaptation. In the middle of the Figure is the promotion of comfort; on the upper part of the Figure are those categories from the patients' findings whilst in the lower part are those categories from the nurses' findings. The attainment and maintenance of the stages depends on how the balance between the different components identified is preserved.
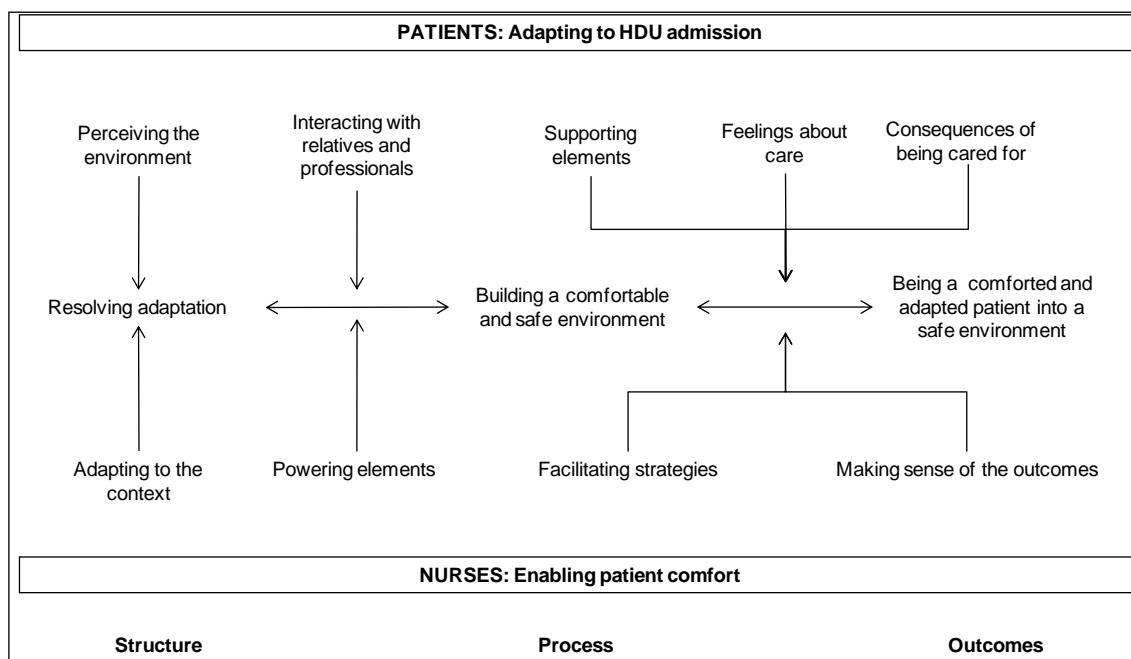
Figure 9.2: Patient Adaptation Through the Promotion of Comfort Framework

The first stage, 'resolving adaptation', represents the interaction between the challenge to face this new situation and the impacts of perceived environment on patients and the challenge that nurses may face, to overcome the impact of context limitations. The data suggest that there are several levels of factors, such as individual patient and nurse characteristics as well as organisational, that could prevent or promote transition through the process from 'resolving adaptation' to 'being a comforted and adapted patient

into a safe environment'. All factors interact with each other and represent a dynamic process with a crucial role being played by nurse-patient interaction.

Patient adaptation through the promotion of comfort is conditioned mainly by the interaction between nurses and patients during the admission process to the HDU and by the care experienced and provided there. It is through this interaction that patient adaptation can be supported through nursing interventions whose purpose includes the promotion of comfort. Adaptation and comfort concepts were constructed and identified from the patients' and nurses' data and have been contrasted with conceptual definitions available in the nursing literature. Both concepts are reviewed below to help to understand the way they are considered within the above theoretical model. The concept of adaptation is one of the main elements of Levine's Conservation Model (Fawcett, 2005:129-165) and Roy's Adaptation Model (Fawcett, 2005:364-437). Levine considered adaptation as the way in which human beings and the environment become congruent over time. She suggested that *'adaptation is not an all or nothing process, rather it is a matter of degree; it just is, some adaptations work and some do not'* (cited in Fawcett, 2005:136); indeed decisions for nursing intervention must be based on the unique behaviour of the individual patient (Levine, 1966). Moreover Roy (cited in Fawcett, 2005:377) defined adaptation as the *'process and outcome whereby thinking and feeling persons, as individuals or in groups, use conscious awareness and choice to create human and environmental integration'*. According to both theorists, the concept of adaptation can be considered in the context of either or both the process or the outcome heading, depending on the individual's response to HDU admission. The second key element is comfort, which is understood in the sense by Kolcaba (2003:251); she stated that comfort is *'the immediate experience of being strengthened by having needs for relief, ease and transcendence met in context (physical, psychospiritual, social and environmental); much more than the absence of pain'.*

Based on Study II data, during the HDU admission, patients face and cope with different situations that may result in different specific outcomes. The nurse in charge has the challenge and opportunity to help the patient understand and deal with this new process and thus modify and smooth their experience (that is, helping them to adapt). To assist that process, nurse professional practice is based on a nursing theoretical framework, on specific knowledge in which nursing care is supported and on the nursing process, that is, the systematic method to deliver care through interrelated stages that allows assessing and diagnosing, planning care, undertaking appropriate interventions and

evaluating patient responses. Wider literature has demonstrated that the nursing theoretical framework supports the relationship between nursing interventions and the achievement of patient outcomes at discharge (Marriner, 2006:395). In relation to specific knowledge, Benner came to the conclusion that *'nurse's clinical knowledge is relevant to the extent to which its manifestation in nursing skills makes a difference in patient care and patient outcomes'* making visible the individual nurse contribution to patient care and outcomes (cited in Marriner, 2006:176). Furthermore, Orlando (cited in Marriner, 2006:437) differentiated between good and bad outcomes, highlighting the effectiveness of the nursing process to achieve good ones.

These elements, nursing theoretical framework, specific nursing knowledge and nursing process, become the fundamental basis on which to build individual nurse skills, competence and knowledge. In this PhD study, based on the experience of patients admitted to the HDU and nurses who take care of them, it has been possible to identify three categories that follow a sequential process. Favourable resolution of the whole process as well as its duration depends on the individuality of each patient and each nurse as to what interactions take place and their consequences. From this approach, it becomes easier to be aware of the importance of the individual components of the nurse (individual nurse skills, competence and knowledge) while interacting with the patient in addition to enabling understanding of the influence of the care environment. Data analysis allows establishing several relationships between categories which are presented in the next subsections.

9.3.3.1. Resolving Adaptation

This first category is considered under the scope of the structure dimension constructed by seeing and testing via coding and category handling of the patients' and nurses' findings together. It focuses on how structure impinges on the capacity for patient and nurse adaptation. 'Resolving adaptation' may be influenced by the structure component (perception of the environment); it is also influenced by the elements included in the process dimension (interactions between nurses and patients), a fact that is reflected in Figure 9.2 by the dual sense of the arrows linking the first and second categories of this theory.

'Resolving adaptation' was the consequence of the patient's response to HDU admission. Meleis and Trangenstein (1994) redefined the nursing mission and referred to facilitating transitions as the focus that reflects the practice of nursing. They stated that

transition refers to the process and outcome of complex person-environment interactions. Depending on the level of adaptation achieved, transition could be promoted. Moreover, building on this basis, 'powering elements' identified by nurses as the interventions that strengthens patient adaptation and patients' interactions with relatives and professionals allows the building of a comfortable and safe environment.

'Resolving adaptation' from the patient's perspective involves not only the first conscious moment in the HDU, in short when patients are admitted to HDU, but also each time a patient interacts with a nurse whom they do not know or who usually takes care of them. How the patient perceives the environment and how these encounters take place are essential to establish the basis on which to facilitate the patient adaptation process that will lead to 'resolving adaptation'.

Hildegard Peplau, (1992, 1997, 1999) as an Interactionist Theorist, focuses very much on the process of care and how the nurse-patient interaction is established. She identified four phases of this interaction: orientation, identification, exploitation and resolution, Peplau highlighted the importance of the orientation phase during admission as an essential phase to be on the right interaction track; through the orientation phase the nurse makes the patient aware of the availability of help to meet her/his needs. The PhD study findings support this perspective, namely, the importance for the patient of the first contact with the nurse. It is at this point that the patient is unaware of the environment, is scared and worried and requires professional care for their needs. From these findings, it is possible to state that depending on whether or not a good relationship is established, the patient adaptation process is encouraged or restricted.

'Perceiving the environment' especially when the patient is admitted to the HDU implies a challenge for her/him. At that moment, adaptation could be promoted, when the patient perceives the environment as peaceful and calm, and could be prevented when this experience is a lack of attention and care or feeling ignored. As the care environment is unknown, often full of discomforting elements, this initial encounter can offset the feeling of discomfort and bring feelings of safety to the patient. Patients' characteristics such as age, gender and type of illness could also modulate the patient 'resolving adaptation'. But the category's special value lies in relation to nursing interventions, based on the unique behaviour of patients to meet their fourteen basic human needs. From the nurses' perspective, the impact of the HDU structure on nursing care can influence patient outcomes and safety. An illustration of this aspect could be the lack of natural light and its

effect on patients. More important are the interventions undertaken by nurses to overcome the consequences of the HDU structure and physical layout as an appropriate caring setting to promote safety.

The PhD findings highlight the impact of structure on patient comfort. The importance of comfort related to structure is addressed in Kolcaba's Theory of Comfort. This is the concept of institutional integrity which is defined as the quality or state of health care organisations being complete, whole, sound, upright, professional and ethical providers of healthcare (Kolcaba, 2003:255); subcategories included in characteristics and organisational issues share the ability to impact on the quality of care process.

In Study II findings, nurses highlighted the capacity they had to make clinical judgments and decisions in order to implement effective care based on their own professional autonomy. As reported in the literature, autonomy is positively related with giving quality of care and nurse job satisfaction (Kramer & Schmalenberg, 2002:35); furthermore, it must be consistent with professional standards guided by protocols and guidelines. The findings suggest that when nurses autonomy occurs along with effective leadership and management, control over nursing practice can be achieved. Differences between autonomy and control over nursing practice are related to the level of impact on individual versus general nursing practice. Autonomy is understood as the ability to make individual decisions about the patient; in contrast, control over the nursing practice is considered a general nursing practice and policy that could affect groups of patients, staff as well as the whole organisation (Kramer & Schmalenberg, 2002:42). The Virginia Henderson model of care is the model adopted in the hospital setting in which the PhD was conducted. In consequence, a patient is viewed as an individual with fourteen basic human needs requiring help toward achieving independence; the patient is also involved in the whole process of care based on these basic human needs; furthermore the independent and the collaborative nurse role is recognised.

9.3.3.2. Building a Comfortable and Safe Environment

The 'building a comfortable and safe environment' is the second category identified that captures the consequences of 'interacting with relatives and professionals' under the application of powering nurses elements. This process can be promoted or prevented depending on how each individual nurse applied the powering element. Moreover it constitutes the gap between 'resolving adaptation' and the last stage 'being a comforted patient into a safe and comfortable environment'.

This second category of 'building a comfortable and safe environment' is also affected by how the interaction process between relatives and health professionals occurs. It is noteworthy that patients, despite their poor health status, are concerned about their relatives and particularly around the relatives' role as informal carers at the time when patients are admitted to the HDU. As was noted in Chapter Seven, relatives have a recognised significance within the Spanish healthcare system. Relatives' implication in patient care depends in the last resort on nurse criteria which are affected by the multiple dimensions of these interrelations. While on the one hand relatives' presence can promote the process of care, on the other hand relatives' presence can also hinder or interfere with the process of care and consequently may affect patients' safety and outcomes. Differences are multi-causal and depend on patient, relatives and nurses interactions and agreements. The patient, concerned about relatives, expressed an extended range of experiences, from feelings of safety if their relatives were allowed to collaborate in their care, most especially for those patients with chronic illness, onto to feelings of guilt associated with the fact of being sick and unable to meet their family needs. Relatives' support ranged from constituting an important physical and emotional support for the patient to facilitating a guarantee of comfort. Teamwork recognition in addition to the identification of the barriers when 'interacting with relatives and professionals', together with the 'powering elements' identified by the nurses, emerged as essentials elements for 'building a comfortable and safe environment'.

Competence is an essential element of nursing that may establish the minimum level of knowledge, attitudes and skills needed to perform safe and quality practice. Expertise was recognised as a very important characteristic that promoted team structure and team members' knowledge, elements that facilitated the work of these expert nurses who relied on the group for fostering collaborative practice. The main expert attributes are responsiveness and appropriateness of response, in short, high levels of competence. In these study findings, expert nurses recognised the value of autonomy; it was a key issue because autonomy promoted clinical judgments and clinical decisions selecting the most appropriate care for patient. Other nursing features included accountability and advocacy, both linked with expert nurses who during patient care demonstrated the need to be aware and sensitive to the patients needs. Competence is the baseline for respect, empowerment and autonomy that may enable the patient to build a comfortable and safe environment; furthermore all these values have an impact on teamwork which itself was a guarantee of quality and safety of care, based on trust and respect. The patient and family

were considered as a member of an ideal team sharing the same aim, in short, improving patient wellbeing and comfort.

The findings also identify the importance of leadership to develop teamwork, in addition to the need to look for sharing spaces to reach collaborative health care practices. Most of the patients talked about teamwork when describing their interactions and experiences with nurses; furthermore their comments suggested that for them it constituted an important element of feeling care, safety and trust. These governing values identify autonomy as one of the essentials to giving quality of care in addition to leadership and management and control over nursing practice.

Particular attention should be paid to barriers identified when interacting with health professionals from the patients' perspective; if these barriers are not overcome they could prevent or make patient adaptation difficult. Patients referred to the emotional implications that being bed-bound could have and the unbalanced relationship with professionals. The consequences of these unbalanced power relationships can affect decision making and therefore have implications on interventions and achievement of patient outcomes. If nurses' identity is not clear to patients, it is not possible for patients to be aware of the benefits or consequences of nurses' work. This could be diluted by this lack of identity and therefore patients will not give any recognition to the nurses' actions.

The last barrier that could prevent 'building a comfortable and safe environment' is related to diversity; principally patients pointed out the importance of being cared for by people from their own culture. In essence this point to the possibility that intercultural difference between values and beliefs are considered a barrier and was experienced as a limitation to care. A nurse from another culture different from that of the patient may mean, from the patient's perception, that their needs are not able to be met. This may have implications in critical decision making affecting safety and quality of care, due to the nurse not knowing about the culturally-related specificity of that patient's needs. However it is interesting to point out that the patient may be unaware that nursing competence, in particular, its inclusion of cultural competence in caring.

9.3.3.3. Being a Comforted and Adapted Patient into a Safe Environment

This last category represents the ideal status to achieve as a basis for promoting safety and better patient outcomes. It is based on elements that could be in either the process or outcomes dimensions of Donabedian's framework (Donabedian, 1966). It is especially significant to realise that this patient category has echoes within nurse

perception, categorised as 'facilitating strategies.' The nurses talked of this as providing the basis for good quality and safe care.

As the process begins to evolve of the patient moving to and being a 'comforted and adapted into a safe environment', individual nurse characteristics help to enable this to happen and progress. The stages from novice to expert described by Benner (Benner, 2001b) are linked to such patient-nurse interactions; professional maturity is considered an antecedent to caring (Finfgeld-Connett, 2008; McMahon & Christopher, 2011). In this PhD framework, antecedents to caring are considered within the structure dimension. Professional maturity, that draws upon empirical, aesthetic, personal and ethical knowledge, as described by Carper (1978), is manifested through the ability to cope, competence and the nurse's knowledge base (Finfgeld-Connett, 2008; McMahon & Christopher, 2011). While professional maturity constituted the antecedent to caring (structure dimension), nurse expertise explained how care was delivered and which interventions were applied (process dimension).

Nurses' professionalism, in short being aware of patients' needs through getting them involved and caring holistically, becomes an essential supporting element for patients. It is necessary to keep in mind that nurse' personal attributes and characteristics impact on how nurses translate their skills and knowledge into effective action. From the patients' perspective, this fact is manifested through the nurses' attitudes becoming the most valuable element of being professional. Accordingly, nurses' negatives attitudes are linked with low levels of professionalism, understood as a lack of looking after the patient and lack of caring. As Collière pondered, a break in the behavioural or gestural continuity of care is just enough to destroy all the quality of teamwork and may lead the confronted patient with more acute anxiety and even despair (Colliere, 2004). In the same way as a nurse portraying a positive nurse attitude, getting patient involvement is an essential supporting element to build and maintain a safe and trusted environment. Nurses promoted patient trust and safety though the process of informing, explaining, instructing and teaching. To support patient adaptation and comfort, a sense of humour and the older age of the nurse were identified as desirable nurses' traits by the patients in this study. While humour promotes patient wellbeing and improves the patient's perspective (elements directly involved in the adaptation process), the preference for older nurses can be explained in relation to the patient's perception of a relationship between age, expertise and professionalism.

Knowing and informing patients, being sensitive[20], being with[21] as well as 'keeping calm and instilling confidence' were identified by nurses as 'facilitating strategies' to support the patient adaptation process. Some of these strategies such as knowing and informing the patient about what is going on can be considered within what Benner refers to as 'daily safety work'. Moreover it is necessary to highlight the relationship between 'keeping calm and instilling confidence' during a stressful patient situation in which comfort could be provided by the expert nurse through the use of touch and communication (Benner, 2001b:64).

It is interesting to note that 'knowing' was seen as essential for participants, patients and nurses, to feel care and to care. Considered from the nurses' perspective, this finding reinforces the notion that caring includes knowing the person behind the patient, and knowing the patient is one of the essentials that nurses cannot neglect if they are to provide safety and quality care. Its primacy lies in the fact that for the patient it is also important to know the person behind the one who is caring for them, to feel comfortable and safe.

To know the person in order to promote the adaptation process implies holistic care, that is, care which involves the physiological, psychological, sociological and spiritual dimensions. Moreover it helps the patient to achieve a degree of balance between mind, body, spirit and environment to move toward a condition of optimum health (Mason-Whitehead, 2008:169), that is, from a theoretical perspective, to enable the optimum degree of adaptation.

These findings suggest that patients' experiences about feeling care are consistent with this concept of the whole person, although the main focus of nurse interventions lies on physiological needs. Clearly in the HDU, patients are in a critical condition which may explain the need for ensuring that initial attention is focused on satisfying basic, mostly bio-physiological, needs. In contrast, some patients indicated that to address these needs was not a competence within the nursing field, although they recognised that special training and knowledge were essential to respond to their needs and answer their requirements, not only at a physical level.

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[20] Being sensitive, being aware'; and physically, emotionally and professionally 'responding and reacting to the needs of others' (Sayers & de Vries, 2208)

[21] Being with, means being emotionally present to the other. It includes being there in person, conveying availability, and sharing feeling without overwhelming the person cared (Marriner, 2006:764)

'Being sensitive' involved being sensitive to information needs and included the ability to receive information as well as to give it (Sayers & de Vries, 2008). The study findings suggest that expert nurses considered that information must be adapted to patients' requirements, in addition to nurses always being alert for signs that indicated whether or not information was enough. In contrast, 'being with' the patient involved the nurse's presence. This was much more relevant than just 'doing for' the patient (Benner, 2001b:57); nurse presence allowed patients the opportunity to have a significant exchange (Zyblock, 2010). 'keeping calm and instilling confidence' demonstrated that an efficient, peaceful and empathetic nurse presence was a comfort and a safety intervention that helped the patient with their degree of adaptation. When the patient experienced anxiety and a lack of confidence, the situation could be made worse becoming at a greater risk and less comfortable.

Nurses' 'facilitating strategies' and patients' 'supporting elements' were essential aspects identified during the process of care that promoted or prevented the care provided becoming safe and comfortable and led to positive outcomes. Expert nurses undertaking 'facilitating strategies' became the bridge between patients and nurses to ensure communication and comfort. Communication between professionals emerged also as a key element to avoid incidents and tasks left undone. In the latter situations, patients perceived a lack of coordination; missed care can itself be argued to relate to teamwork and relationships with the patient and moreover with nurse expertise and their awareness. What makes a difference is the capacity for clinical judgment and making clinical decisions.

Categories identified within the outcomes dimension are related with 'feelings about care' and 'consequences of being cared for' from the patients' perspective, in addition to 'making sense of the outcomes' from the nurses' view. Each of the three categories identified allows the analysis of the different quality dimensions described by Donabedian. As shown, 'resolving adaptation' is a part of the structure dimension, 'building a comfortable and safe environment' part of process and 'being a comforted and adapted patient into a safe environment' part of the outcomes dimension. It is important here to stress that these components are dynamic and therefore can move from one to another quality dimension in relation to the specificity of the relationship being analysed. The 'feelings about care' category was constructed in relation to patients' expression about their health experience and needs in HDU, focusing on the consequences of nursing care and especially with those interventions identified in the sub-category 'incidents and task

left undone' (itself within the 'making sense of the outcomes' category from the nurses' data). Incidents were associated with patients, individuals, communication, and organisational factors. Most of all, what has to be made explicit was the importance of the individual nurse's characteristics to detect and overcome an incident. Knowing what is going on involves an awareness (Schmidt, 2010); being aware allows detecting inadvertent inconsistencies in medical prescription, especially in those patients with mental illness; furthermore it is the intervention needed to provide comfortable and a safe environment for patients.

'Consequences of being cared for' constitutes the last link with the previous issues to achieve the goal of 'being a comforted and adapted patient into a safe environment'. 'Consequences of being cared for' involved the importance of feeling care and receiving high quality care in addition to receiving affection and knowing that someone is aware of 'me, the patient'. In this category, it was clearly stated that feeling comfortable was connected with the experience of care. Importantly this highlighted the need for the congruence between patient and nurse values and beliefs in relation to care and the significance of encouragement. When the caring experienced was of high quality, the patient expressed, after the interaction, that s/he felt safer; the most common intervention performed related to providing (more) information.

From the nurses' perspective, teamwork constituted an essential element to build a safe practice environment in which communication and interaction between all the actors, in short patients, relatives and health professionals, was identified as a key theme. To achieve a completely safe environment which meant also to improve comfort and quality of care, it was seen as necessary to establish systematic communication and interactions between hospital and primary care. Moreover when promoting comfort is considered, the nurse's attitude, as well as the governing values described above, informed the interventions identified by nurses to promote patient comfort. Indeed as was pointed out previously, the promotion and the experience of comfort created a basis for individual nurses' attitudes, skills and knowledge, all crucial essentials to permit high quality patient centred care. Additionally, patient safety was promoted when the patient perceived that the nurse knew her/him; this promoted patient trust in the therapeutic relationship. Furthermore, the use of therapeutic touch was described as an important element for patients in promoting comfort. These findings are consistent with Benner's work which suggested that the use of touch and communication during a breakdown situation provides comfort to the patient (Benner, 2001b:64).

The substantive theory of patient adaptation through the promotion of comfort led to the identification of some structure and process variables that may affect patient outcomes from both the patient and nurse perspectives; likewise it enables clarification of what can be understood as an outcome(s) of nursing practice. In the next section, a summary overview of this substantive theory of patient adaptation through the promotion of comfort is provided. This highlights the factors involved in the achievement of patient adaptation, including interventions performed by nurses, and how interactions occurred within the context of HDU as well as individual nurses' characteristics; all of these become distinguishing factors of nursing care to achieve patient outcomes.

9.3.4. Section Summary

This section has drawn together the findings from the qualitative phase of this PhD study and discussed the emergent 'Substantive Theory of Patient Adaptation through the Promotion of Comfort' based on the patients and nurses findings. Reviewing and rethinking the interactions of both sets of participant findings firstly, from the patients' data, their adapting to the HDU admission, and secondly, from the nurses' data enabling patient comfort was completed through seeing and testing via coding and category handling (Richards, 2009:166) using the dimensions within Donabedian's Quality Framework. Three categories were constructed when trying to understand nurse-patient interactions: 'resolving adaptation', 'building a comfortable and safe environment' and 'being a comforted and adapted patient into a safe environment'. This substantive theory provides insight into aspects of nursing care perceived by patients and nurses that influence patients' outcomes and safety; it helps to gain an understanding of what each group perceived as an outcome of nursing in the HDU.

To date, most of the staffing-outcomes research has been conducted using a quantitative research approach. Whilst there are some studies using qualitative research approaches, there are few that address specific issues of the process of care (Schmidt, 2010; McMahon & Christopher, 2011). None of these relate this with the patients' outcomes. Nor do they consider the issues under study from either or both of the patient and nurse perspectives. Discussion now turns in Section 9.4 to consider the findings from Study I and Study II and to demonstrate how the findings from Study II provide a possible rationale for why nurse staffing and the structure and process of nursing care affects patient outcomes and safety.

9.4.   Considering and Interpreting Findings of Both Studies as a Whole

This section presents an overview connecting all of the pieces of the two studies' findings, explaining the structure and process variables related to nursing, aspects of nursing care that patients and nurses perceive as influencing patients' outcomes and safety, as well as what is perceived as an outcome of nursing in the HDU. The two empirical studies within the PhD yielded significant findings and provided insight into the direction of key nursing structure and process variables, their interaction during the process of care as well their impact on patients' outcomes and safety. This section also reinforces the need for two such complementary empirical studies and the ways that together they can begin to provide answers to, and deepen understanding of, the underlying research question focused on nurse staffing, patient outcomes and safety. Such an exploration of these phenomena adds knowledge to the whole picture of nursing care and redresses the balance between quantitative and qualitative approaches in staffing-outcomes research.

The PhD findings reinforces the fact that staffing-outcomes research is a complex process; moreover, despite the prospective nature of Study I and the use of log-linear modelling, it is difficult to identify definitive linear causality between the variables, over and above the observed statistically significant relationships. Based on previous studies, some observed statistically significant relationships must be considered with caution and there is a need to reflect on which of the outcome variables can be attributed and considered as an outcome of nursing practice. One example is the inconsistency of considering nurse staffing as the most important factor in determining quality and safe care, as its effect could be supplanted by other variables (Clarke, 2009). In Study I, this relates in particular to the sub-set of 'closely monitored' patients, in the context of considering patients' mortality as an outcome of nursing practice. Although it may be surmised that the consequences of nursing interventions are key, or at least their omission would be (that is, reduced level of monitoring for patients at especially critical or high risk), it should not be forgotten that a patient with an acute critical care illness is in a complex situation in which many other variables such as routine safety checks may impinge on patient recovery (Benner et al., 1999:455-459). In this way, nursing interventions may be considered as a necessary but not sufficient condition to explain the risk of death.

Although these PhD findings report a significant relationship between nurses' experience and patients' mortality, it is important to emphasise that this relationship must

be interpreted with caution as several other factors may influence patients' mortality. For instance, Numata *et al.* (2006) conducted a literature review of nurse staffing levels and hospital mortality in critical care settings which included nine observational studies. Their findings did not report nurse staffing levels as having a significant impact on patients' hospital mortality, showing that hospital mortality may not be sensitive enough to detect the consequences of low nurse staffing levels in critical care settings (Numata et al., 2006). Other structure variables such as age and shift hours have demonstrated their negative impact on quality of care (Chen et al., 2011). In this PhD study, shifts are 12 hours or less, and the mean nurses age is similar to that reported in other studies (Aiken, Clarke, Cheung et al., 2003) meaning that the structure dimension must not be considered alone when the impact on outcomes is analysed.

Looking across both studies, these PhD results confirm previous findings which suggested that the role of the expert nurse is essential. This was identified as a potential key variable in making sense of the observed statistical relationships found in Study I. The findings also add new knowledge. Again, in Study II, other nurse characteristics identified were accountability and advocacy, both of which are linked to expert nurses. These characteristics lead to an adequate nurse presence and as a consequence impinge on clinical judgement and decision making to build a comfortable and safe environment. Thompson and Dowding (2009:5) state that one of the differentiating factors that marks out exceptional nurses, is their skill in judgment and decision making; this explains why some nurses achieve better outcomes than others. This again helps to make more sense of the results of Study I, by drawing attention to possible mechanisms or ways in which variables can be understood to have their effect.

In Study I, patients reported high levels of satisfaction which in the Henderson model, is related to meeting patients' needs. Here again, the value of the second study becomes evident. Nurses' interventions such as getting patients involved and caring holistically helped to modulate patient's perception and adaptation to their environment. Expert nurses that value teamwork, autonomy, the exercise of clinical judgment and decision making generated trust through informing patients and performing timely interventions. Teamwork was also related with feeling care, safety and trust. These findings fit together with Cotterill-Walker's position (2011) and shed more light on previous studies exploring the process of care and its consequences for patients outcomes. Cotterill-Walker (2011) identified five common themes suggesting that patient care is affected by increased confidence and self esteem, enhanced communication, personal and

professional growth, knowledge and application of theory to practice, and analytical thinking and decision making. Plausibly, these last two process variables may constitute the basis for clinical judgment which itself may be influenced by years of experience and the nurse's level of education (Aiken, Clarke, Cheung et al., 2003).

Moreover it is possible to link nurse expertise and the positive application of the powering element which, in these PhD findings, led to promoting the building of a comfortable and safe environment. Enabling patient comfort is the ultimate goal to support the patient and their adaptation into a safe environment. Comfort implies an appropriate and timely intervention, and is recognised as *'the immediate experience of being strengthened by having needs for relief, ease, and transcendence met in four contexts physical, psychospiritual, social and environmental; much more than the absence of pain'* (Kolcaba, 2003:251-252). Expert nurses supported patients to cope with their admission to a HDU and helped them to gain comfort.

In this PhD study the impact of years of experience and nurse's level of education is particularly evident with the subset of closely monitoring patients. These findings concur with the work of Benner and colleagues. They pointed to the nurse with more advanced knowledge and the impact of critical reflection, critical reasoning and clinical judgment on patients' outcomes (Benner et al., 1999; Benner, 2001b). For instance, when Benner and Tanner (1987) interviewed nurses with at least five years experience, intuition was identified as an essential aspect of clinical judgment; their participant expert nurse clinicians were making lifesaving differences to patients. In the same way, inappropriate judgment was identified as a causative factor of practice errors by nurses (Benner, 2002). Here again, the insights from Study II are assisting in understanding the findings of Study I.

In this PhD, continuity of care was seen as essential to maintain patient adaptation and comfort, with shift hand-over identified as an essential tool for care continuity and one that may influence patients' safe and outcomes. According to Muir Gray (2007:70), the development of systems, such as efficient shift changes, can lead to more efficient care planning, avoid gaps in care, minimise mistakes and prevent errors (Lamond, 2000; Dowding, 2001; Staggers & Jennings, 2009).

Nurses' 'facilitating strategies' and patients' 'supporting elements' were essential aspects identified during the process of care that promoted or inhibited the care provided becoming safe and comfortable; they also led to and supported the achievement of positive outcomes. Nurses' 'facilitating strategies' were performed by expert nurses and

this became the bridge between patients and nurses to ensure communication and comfort. Well-adapted patients are in the best position to understand and accept their health condition and its consequences. The essential element identified in Study II was the enabling of comfort that allowed patients to understand this process. A discomforted patient cannot adapt to the new situation and in consequence this fact entails a risk that may have an impact on patient safety and outcomes.

To conclude this section, special attention should be paid to what, how, when, where and from which perspective, outcomes of nursing practice must be determined and analysed. Study II findings cohere with the views of Muir Gray (2007:81), who suggested the importance of measuring outcomes of value to patients. In the same way, the findings echo his comment that '*feeling respect as an individual is an outcome that patients value highly and is of value in its own right, independent of the technical care*' (Muir Gray, 2007:80).

9.4.1. Linking Study II theoretical framework with Study I findings

The analysis of both studies' findings demonstrated relationships between the variables of structure and process as well as how both impact on patient outcomes, offsetting some of the aspects that have been identified as limiting issues from Donabedian's Quality Framework. In the prospective observational study, Study I, risk of death and failure to rescue increased when patients who required close surveillance were considered (surveillance every 15 minutes for at least six hours at any time of the HDU patient admission). Close surveillance, performed when a patient was hemodynamically unstable and was at risk of suffering some complication, could be interpreted as relating closely with the categories identified in Study II under 'building a comfortable and safe environment'. For example, teamwork, nurses' expertise as well as 'being sensitive' and getting patient involved in their own care are suggested as key elements or features or requirements of the nurse to enable them to address a patient's' crisis, to lead to early identification and to avoid or control the occurrence of fatal complications. The observed critical case, of the less experienced nurse not addressing a patient's need, reinforces this interpretation. In this way, core categories arising within Study II aid understanding (as possible underlying mechanisms) of observed statistical interrelationship in Study I, for example, risk of death and failure to rescue.

When considered the whole range of patients' characteristics and considering patients' safety incidents, a similar commentary applies. The low incidence of nosocomial

infection and medication errors, besides the other patients' safety incident, were the outcomes most directly influenced by nursing care process. Patients comments on this process indicate the value of nurses' being professional. Analysis of the nurses' data identified several supportive interventions such as 'knowing' and 'informing' patients as well as 'keeping (the patient) calm' and 'instilling confidence'. This may again help to clarify Study I findings when considering patients' safety incidents and aid understanding of underlying mechanisms to account for the observed statistical relationships.

A further point to remember is that the findings in Study II focus on possible outcomes valued by patients or sought by nurses within the confines of the HDU. Patient adaptation through the promotion of comfort promotes two positive outcomes, 'feeling comfortable' and 'feeling safe'. Both outcomes help patients to deal with the HDU admission process modifying their experience, in addition to encouraging and maintaining their adaptation situation that brings benefits to the patients. Most importantly, this reinforces a major conceptual issue about outcomes (as discussed in Chapter Three); in particular, what is an outcome in one context may in another be a process. For example, while 'enabling patient comfort' was presented as a core category from the nurses' data, from a more general view of outcome (and as measured within Study I), a patient might still die. In this scenario, other outcomes, implicit within any health care context (such as the risk of death, particularly acute in a HDU context), may not be drawn attention to within nurse interviews. The expressed and interpreted desired outcome for the nurse was however expressed within the interview and within the context of the HDU as being centred on the issue of enabling comfort.

In using the findings of Study II to help interpret the findings of Study I, this key point must be borne in mind. 'Enabling patient comfort' can be suggested as a mechanism to aid understanding of a relationship between the number of nurses, their age and experience, etc, and patient outcomes. Moreover, the findings of Study II can help to clarify the actual ways (that is, in Donabedian's terms, the processes) that the nurses following through their care and thus enable patient comfort.

9.5. Chapter Summary

This Chapter has provided an explanation and discussion of the findings from the two complementary empirical studies undertaken within this PhD. Focusing on Study I, it has been highlighted that evidence available from the previous staffing-outcomes research has displayed a potential risk of bias. To reduce this and approach this limitation, in particular,

arising through conducting a quantitative study only, Study II was carried out to obtain sharper and more in-depth findings about the relationship between the nursing structure and process variables and outcomes of patients in a HDU setting, from both the perspective of the patient and the nurse. Section 9.4 of this Chapter has explored how findings from Study II help to shed light on the relationships found in Study I. It becomes manifest that there are defined baseline characteristics of patients and nurses that influence the process of adaptation though the promotion of comfort, bound together with the essential element of the patient-nurse interaction which can promote or prevent this process.

In response to what patients and nurses perceived as the outcome of nursing practice in a HDU, this was implicit in both sets of participants' discourse. Features perceived as an outcome have two main characteristics; the first one was related with timely measures and the second with the fair poor presence of nursing as well as lack of coordination that may influence the safe and high quality of care perception delivered. Discussion now turns in Chapter Ten to present the final conclusions of the PhD and explore its strengths and limitation and implications for research, clinical practice, nurse education and management.

Chapter 10
Conclusions and Recommendations

10.1. Introduction

The primary purpose of this thesis was to describe and explore the influence of nursing structure and process variables on patients' outcomes and safety as well as to identify gaps that need attention both in nursing theory and practice. To explore this, two complementary studies were undertaken, Study I a prospective observational study and Study II an exploratory interview study, both involving patients admitted to a Spanish HDU and the nurses who took care of them.

Through the generation and analysis of HDU patients' and nurses' data and based on the description and analysis of contextual factors influencing patients' safety and outcomes, the PhD analysed the relationship between nursing staff and patient variables and developed a substantive theory of the aspects of nursing care that promote or prevent the achievement of positive patient outcomes and the delivery of safe, high quality care.

The use of a complementary quantitative and qualitative approach to answer these PhD research questions has allowed the identification of the following main findings:

1. What are the structure and process variables related to nursing that influence patient outcomes and safety in a HDU?

   – An increase in nurses' years of experience and educational level was associated with a decrease in patients' risk of death, failure to rescue and readmission rate.

   – An increase in nurses' perception about the quality of care and autonomy was also associated with a decrease in patients' risk of death, failure to rescue and readmission rate.

2. What aspects of nursing care do nurses perceive as influencing patient outcomes and safety in a HDU?

   – An increase in the risk of death and in failure to rescue as well as in surgical nosocomial infection was observed in those patients that required close monitoring (every 15 minutes for at least 6 hours) at some point during their HDU admission.

   – Findings from the nurses' data in Study II suggest that several factors influence patients' outcomes and safety. The most relevant set are included under the 'facilitating strategies' category, that is, knowing and

informing the patient, being sensitive and 'being with' in addition to 'keeping calm and instilling confidence'.

3. What do nurses perceive as the outcomes of nursing practice in a HDU?

  − Findings from Study II suggest that concern for the patient was essential to promote patient comfort and to ensure that safe and high quality care was provided.

4. What aspects of nursing care do patients perceive as influencing their outcomes and safety in a HDU?

  − Findings from the patients' data in Study II pointed to several factors in the 'supporting elements' category, that is, those that sustain patient adaptation processes though the promotion of comfort, and thus influence patients' outcomes and safety.

5. What do patients perceive as the outcomes of nursing practice in a HDU?

  − Findings from Study II suggested that 'feeling cared for' is the category that most reflects the consequences of nurses' interventions. This category includes feeling comfortable and feeling safe, both of which promote patient adaptation.

The Chapter puts forward the contributions of this thesis in five sections. Section 10.2 presents the conclusions from the findings of both studies, both separately and taken together, to inform the gap of knowledge that this PhD elucidates. Section 10.3 draws out the strengths and limitations of the studies, in order to testify to the validity and rigour of the research and its findings. Section 10.4 explores the contribution of the research to knowledge and the implications of the findings for the fields of clinical practice, management and education and suggests recommendations for further research. The Chapter concludes in Section 10.5 by highlighting the most important aspects that have been discussed.

10.2. Conclusions of the PhD

This PhD study arose from the concern as to what nursing structure and process variables influence patient safety and care outcomes; the intention was to deepen understanding on what the outcomes of nursing practice are from the patient and nurse points of view and thus add to knowledge about how nurse-related process variables influence safety and health status outcomes.

Study I, a three-month prospective observational study, demonstrated that all eight nursing structure variables analysed (nurse age, experience, HDU experience, professional category, work situation, educational level, critical care high degree and high nurse turnover) influenced the probability of patient mortality and all except high nurse turnover also influenced failure to rescue. These findings are similar to those reported by other studies, although it must be remembered no single trend is evident in the literature (Lankshear et al., 2005; Numata et al., 2006; Butler et al., 2011). Of particular interest are the findings related to closely monitored patients, that is, those who required surveillance every 15 minutes for at least 6 hours at any time during patient HDU admission. Here the risk of death decreased by 11% when the nurse's age increased by one year (compared to up to a 50% reduction for those not needing close monitoring). Risk of death increased by 3% when the patient age increased by one year and to 16% when the Charlson Comorbidity Index increased by one point. The picture for the risk of failure to rescue was more marked. Here the risk of failure to rescue decreased by 39% when the nurse's HDU experience increased by one year (compared to up to 64% for patients not needing close monitoring). These findings provide a substantive contribution to knowledge in this field, as no previous studies have explored the implications of nurse structure variables and the needs of closely monitored patients.

When considering patient safety the same trend is observed. All eight nursing structure variables influenced patients' life-threatening situations and from those, seven (all except high nurse turnover) also influenced surgical bleeding. If the nurse's HDU experience increased by one year, surgical bleeding risk decreased by 55% and the risk of life-threatening situations by 19%. Moreover as a consequence of a one point increase in the Charlson Comorbidity Index, the risk of surgical bleeding increased by 26%. It is valuable to note that the nurse's perception of quality and autonomy of care, both of which are process variables, influenced patients' mortality, failure to rescue, readmission and pain as well as patient safety variables, including surgical bleeding and life-threatening situations. A one point increase in both the quality of care perception and autonomy perception was associated with a decreased risk of death, respectively, of 30% and 37%, failure to rescue risk by 19% and 23% and risk of pain by 21% and 23%. These findings are coherent with previous research on Magnet hospitals, where autonomy is considered an essential attribute of the culture of excellence, and is related to providing quality of care and nurse job satisfaction (Kramer & Schmalenberg, 2006:35). These are also potential mechanisms that could explain the decrease in the negative patient outcomes. This PhD

study also found that readmission risk was reduced by 34% when both quality of care and autonomy perception increased by one point; surgical bleeding risk decreased, respectively, by 53% and 59%, and life-threatening situations by 37% and 42% for the same reason.

Gaining insight into how and why these relationships might come about was a core part of the rationale for Study II. Its aim was to assist understanding and to seek further explanations through looking in-depth at the perspective of the patients and the nurses providing their care. From the Study II patients' data, 'adapting to HDU admission' emerged as a core category. This was constructed from how patients perceived their environment, interactions with professionals and relatives, 'feelings about care' and the 'consequences of being cared for'. From the Study II nurses' data, 'enabling patient comfort' was constructed as the core category. It comprised four main categories, namely, 'adapting to the context', 'facilitating strategies', 'powering elements' and helping the patient 'making sense of the outcomes'. As indicated in Chapter 9, it is particularly important that patients and nurses share the vision about key caring elements involved in interactions, such as trust, being with, being sensitive, being aware, teamwork and expertise. Key 'facilitating strategies' to promote patient comfort, from the nurses' point of view, were being sensitive and being with the patient, knowing and informing patients, 'keeping calm and instilling confidence'. From the patients' point of view, these elements were grouped within the category of 'supporting elements', that is, supportive interventions carried out by the nurse to promote comfort and enhance adaptation to their current ill-health and physical (location in a HDU) situation. This is summarised in the substantive theory of patient adaptation to HDU admission, presented in section 9.3.3 in Chapter Nine.

As mentioned, patient adaptation and patient comfort emerged as important elements on which nurses' interventions may impinge. Study II data suggested how the findings from Study I may be explained. More experienced nurses reported the importance of knowing and informing patients, being sensitive and being with the patient in addition to keeping (the patient) calm and instilling confidence as 'facilitating strategies' that promoted patient comfort and adaptation. From the patients' data, it is possible to identify the nurses' 'facilitating strategies' in the 'supporting elements', expressed by patients through feelings of getting/being involved in holistic care, itself given by professional nurses who had supportive traits such as humour and being older. These nurses' variables may influence the way of providing care, in essence the way through

which the promotion of comfort patient adaptation to HDU admission is enhanced, supporting better patient outcomes and safe process of care; these factors help in extending understanding of the correlation findings within Study I. This suggests the importance in future research incorporating both adaptation and comfort as potential specific outcomes of nursing practice to assess the impact of nursing interventions.

In summary, special attention should be paid to the fact that the findings from Study II within this PhD have enabled identification of additional process variables that help to understand and explain the relationships identified in Study I's quantitative data between nurses structure and process variables and patient outcomes and safety.

10.3. Strengths and Limitations

The maximum strength of this thesis lies in the fact that the two studies are complementary and that the study setting has only been explored before in a few previous studies (Bolton et al., 2001; Donaldson et al., 2001; Garretson, 2004; Walther & Jonasson, 2004; Welton et al., 2006; Needleman et al., 2011). The quantitative study, Study I, replicates earlier studies conducted on the relationship between structure and outcome variables within nursing care. Commonly these established significant relationships between variables such as years of experience and mortality and failure to rescue. Importantly, the current research is the first such study within Spain and within a HDU setting. In addition, this PhD study addressed some of the limitations of previous research. Here, direct measurement was undertaken of the individual patient's exposure to specific characteristics of nurse staffing levels in addition to unit-specific factors relating to the HDU setting, and thus may have avoided some of the biases highlighted in previous studies due, for instance, to the low nurse response rate (Kovner & Needleman, 2003).

The qualitative study, Study II, is also the first of its kind to be undertaken alongside a quantitative study, and moreover the first to include and explore in the same study both patients' and nurses' perspective. Furthermore, the findings from Study II help to interpret those of Study I, through their identification of the key process and outcome variables of adaptation and comfort. Special attention was paid to the design of the nurse focus groups. The fact that nurses in the same focus group belong to the same shift helped to enhance the validity of their information, as all the participants shared the same experiences and interventions and knew the details of what had happened.

As has been documented in the methods (Chapter Five) and followed through in the presentation of the results, rigorous analytical approaches were applied to the data. Study I (Chapter Six) involved both a descriptive and inferential approach, using well recognised and appropriate analytical tools. These included: clear tabular and diagrammatic data presentation, use of confidence intervals and significance testing, and logistic regression modelling including statistical adjustment/control for confounders. Study II employed a constructivist grounded theory approach to the analysis and interpretation of the patient and nurse data sets (Chapter Seven and Eight). The presentation of findings elucidated the emerging categories and substantive theory, illustrating these by appropriate extracts translated from the patient and interview data.

In relation to limitations, the first relates to the nature of the methodological design used. A prospective observation study is unable to demonstrate how the relationship comes about or to explore causation definitively. However, this is offset by the purpose and focus of the Study II, aimed at gaining additional understanding of possible mechanisms and reasons for such relationships. The second point to take into account is the limited generalisability of the findings because the study took place in one hospital and in one HDU and was conducted over a three-month period. A possibility for future research is to undertake a similar study in the same setting but using a multi-centre design. The third limitation relates to the information sources used. Much of the data was dependent on whatever the nurse had recorded in the nursing record. It therefore has to be noted that the fact that particular information was not recorded does not necessarily mean that the intervention itself was not done, but it cannot be evaluated as such within a research study. This is a clear limitation that in part could be overcome and here is partially offset with the information from nurses' interviews and the field work.

A fourth limitation which must be considered in interpreting the results relates to sample size. This could be considered small (n=501) when comparing with the studies from large administrative data sets carried out in the USA and Europe over the last decades (Aiken et al., 2002; Aiken, Clarke, Cheung et al., 2003; Rafferty et al., 2007; Shuldham et al., 2009; Van den Heede et al., 2009; Needleman et al., 2011). However, it is important to remember that Study I included all patients admitted to the HDU during a three month study period and all the nurses who cared for these patients, which undoubtedly is a strength of the study. Moreover, when this study sample is compared with studies performed in critical care settings, in eight of these twenty-six studies the sample size was bellow 500 patients (Penoyer, 2010). Within Study I's limitations, it is also necessary to

highlight that the nursing literature does not support patient mortality as an appropriate measure of nursing quality (Pierce, 1997). Although a large number of studies have reported mortality as an outcome of nursing practice, mortality must be considered with caution because it reflects much more than the consequence of just the nurse's interventions.

Despite the limitation related to the measure of the autonomy variable in Study I, the interview findings from Study II demonstrates the relevance of this variable for nurses when considering the care process, supporting the reliability of the rating scale measures used in Study I. Assumptions and limitations about the choice of multiple regression model have been reported in Chapter Five highlighting that the choice was made based on clinical considerations and the intention to replicate the analyses of other work on nursing staffing and outcomes. It is both possible and plausible that variables such as age, educational level and length of experience included as separate variables (with significant contributions to the explained variance) in the model, all measured similar things (the problem of co-linearity) or may operative in an interactive manner (interaction effect). This possible co-linearity as well as possible interactive effect may cause problems with estimation, and thus reduce the predictive power of the model. Further limitations are noted due to the fact that some of the variables have wide confidence intervals.

Limitations of the Study II can be related to the difficulty of ensuring that data saturation was achieved due to the limitation of the data collection period. This was initially set to be three months in duration, due to the need to complete the study to deadlines; nevertheless the study period was increased by a month due to the nurses' difficulty of participating in the discussion groups during the period around Christmas. The study period limitation was partially offset by the careful selection of patients for interview, based on a theoretically informed matrix of HDU patient profiles, specifically designed to ensure the inclusion of patients with different characteristics aiming to ensure diversity of perspective. In addition, each patient interview was immediately reviewed by the researcher, to ensure that appropriate information was being collected, and where necessary to modify the topic guide for future interviews. Additionally it must be highlighted that patients in this sample were from only one setting and one hospital; in consequence, unique organisational factors may have some influence on the findings.

Findings in Study II focus on possible outcomes valued by patients or sought by nurses within the confines of the HDU. Patient adaptation through the promotion of

comfort promotes two positive outcomes, 'feeling comfortable' and 'feeling safe' which reinforces a major conceptual issue about outcomes (as discussed in Chapter Three). Additionally 'enabling patient comfort' can be suggested as a mechanism to aid understanding of a relationship between the number of nurses, their age and experience, etc, and patient outcomes.

To finalise this section it is interesting to note that Butler et al. (2011) carried out a Cochrane systematic review on hospital nurse staffing models and patient and staff-related outcomes, the authors identified sixty studies that meet the inclusion criteria but only fifteen were included after the bias assessment conducted by using the EPOC risk of bias tool. Findings suggest that the addition of specialist nursing and specialist support roles to the nursing workforce may improve some patient outcomes, such as length of stay and glycosylated haemoglobin (Butler et al., 2011). Based on these systematic review findings it could be stated that staffing-outcomes research face the challenge of requiring more rigorous research and new approaches.

10.4. Contributions and Implications

This section highlights the contributions to knowledge of this PhD thesis and explores the implications for practice, for education and for management. At the end of this section, recommendations for further research are outlined.

10.4.1. Contributions to Knowledge

This PhD research contributes to the growing body of knowledge on the influences of nursing structure and process variables on patients' outcomes and safety within the HDU. The process variables identified in Study II suggest possible mechanisms that could explain the Study I findings. These mechanisms may include variables such as nurses' knowing and informing patients, being sensitive and being with, in addition to 'keeping calm and instilling confidence', all of which are perceived by the nurses as a 'facilitating strategies' that sustain patient adaptation processes through the promotion of comfort.

Findings from Study I reproduce similar results to those reported in the literature in a setting not commonly explored (the HDU). Findings provided a description of patients' and nurses' characteristics and support the impact of nurses' variables such as years of experience and educational level on patients' outcomes and safety, such as mortality and failure to rescue. The hypotheses tested also showed a positive relationship between

process variables such as quality and autonomy perceptions of care and patients' mortality, failure to rescue, readmission and pain as well as within safety patients variables of surgical bleeding and life-threatening situations.

Theoretical explanations generated by a grounded theory approach in Study II were valuable to both clarify and inform possible outcomes of nursing practice leading to a broader view on this issue. The process of identifying concepts and relationships central to patients' and nurses' perceptions on aspects of nursing care influencing patients' outcomes and safety led to the construction of a complementary vision from both groups of participation in the processes of care. From the patients' perspective, the core category 'adapting to HDU admission' was highlighted, while for the nurses it was that of 'enabling patient comfort'. Both add to the literature; nurses' interventions lead to patient adaptation promoting better patient outcomes and a safe process of care and through these nurses promote and enhance positive patient outcomes and safety. These findings suggest the importance of developing instruments to test systematically the link between nursing interventions and patients' safety and outcomes.

To summarise, the findings of this thesis add to knowledge about the outcomes of nursing in critical care and provide additional insight into possible mechanisms that facilitate the patient's adaptation to their environment and situation through the promotion of comfort on admission. Furthermore, the findings add to knowledge about the context in Spain and in a HDU setting on the relationship between structure and process variables that promote positive patients' outcomes and enhance safety. This PhD thus allows further reflection and discussion about which outcomes of nursing practice should be considered in order to the measure the impact of nursing practice, and why such relationships might come about.

Additionally, the PhD has offered important highlights about the benefits of using quantitative and qualitative approaches within the same study to explore the same issue in staffing-outcomes research and to complement the strengths and limitations of each other. This multi-faceted area of research requires such a blended and broad approach. The approach is coherent with the argument of Mruck and Mey (2010:515), who comment, *'In times of social change and globalisation, the limitations of quantitative methods are evident since, by definition, they are primarily useful with regard to theories or a hypotheses derived from existing and established theories. But if such theories are*

missing or outdated, methodologies are crucial which help to develop novel theories from empirical data'.

In summary, outcomes of nursing practice have in previous research mainly been analysed from a negative dimension such as mortality, failure to rescue (FTR), readmission, pain and length of stay, all of them from a quantitative perspective (Subirana et al., 2010). This PhD research points to the importance of the measurement of positive outcomes such as comfort which more clearly can reflect the dimensions of nursing care and the importance of making visible the impact of process variables such as knowing patients, trust and nurses presence on patients' outcomes. The PhD also illustrates the richness of the use of both approaches, quantitative and qualitative; highlighting the need to review the paradigmatic approach to staffing-outcomes research and develop combined tools to incorporate all the highlighted significant variables, which could be used within the clinical setting.

10.4.2. Implications for Practice, Management and Education

It is of fundamental importance to evaluate the quality of care delivered to HDU patients, raise awareness of, and seek ways to support and enable nurse interventions which work towards assisting patient adaptation through the promotion of comfort. Moreover it is necessary to reflect on current nursing practice and how this may influence the way the patient perceives their condition in addition to how they face and adapt to their HDU admission, and as a consequence promote more positive patient outcomes.

The research findings point to the importance of a number of areas with implications for practice, management and education. Two such areas are effective communication skills with patients and closer working between nurses; both are required to achieve patient adaptation through the promotion of comfort. Appropriate information tailored to the patient should be readily available. Communication should be based on trust and nurse accountability; moreover, the patient should be cared for by appropriately trained and experienced staff in order to be able to cover all the critical patients' requirements. Findings from this PhD suggest that, for a critical care context, staff need to be appropriately trained within critical care and at degree level. Special consideration needs to be given to the perception of nurse autonomy and the nursing presence, in addition to how clinical judgement, decision making and teamwork are supported. These variables are constructed from patients' and nurses' data and although the study findings need to be interpreted with caution, due to issues related to sample size, all of them seem to

influence patients' outcomes. There should also be stronger links between nurses and patients to provide a completely integrated approach to ensuring comfort and thus to support and enable patient adaptation.

One of the biggest challenges facing organisations today is the routine availability of information concerning the outcomes of nursing practice that allow objective identification of the impact of nursing interventions on patients' outcomes. A key implication of the research for management is to explore and introduce the necessary changes to encourage positive outcomes and enhance organisational growth. It is also necessary to make visible the outcomes of nursing practice in addition to establish tools that allow benchmarking between organisations. Effective assessments tools, such as those on comfort reported by Kolcaba (2003:215-217), would provide an assessment about how nursing practice impinges on patients outcomes.

A further implication of the findings lies in relation to educational practice. Competences included in nursing students' programmes must be focused on critical thinking and reflective practice, in addition to promoting the awareness and the usage of safety and quality indicators. This is needed to take forward practice, specially within the wider context of a need to develop, and sustain, evidence-based, collaborative and patient-centred practice as well as the systematic monitoring of the outcomes of nursing practice, to allow periodic reporting on the safety and the quality of such practice.

10.4.3. Recommendations for Future Research

One area for further staffing-outcomes research is to examine the traits of nurse staffing within the process dimension to establish the essential variables that make a difference to patients' outcomes. This means that studies should include some of the categories identified from this PhD's findings, such as knowing the patient, trust, competence, relationship, attitude, professional knowledge and presence. It is interesting to note that these possible tipping point variables, to promote positive patient outcomes, are considered in the nursing literature as some of the defining attributes of caring (McCance, 2005:40-41; Rose, 2008:43).

Moreover it could be relevant to include systematically those essential Magnet factors related to production of quality care in order to make clear the point on what, under which circumstances, and how these, and the factors noted in the preceding paragraph, make a difference to the quality of care, patient outcomes and safety; that is,

to evaluate nurse autonomy and accountability, competence, relationship and communication, supportive nurse manager, control over nursing practice and practice environment, support for education, adequate nurse staffing and concern for the patient. Some possible measuring tools exist such as the nurse-physician relationship scale (McClure, 2006:33) and the clinical autonomy scale (McClure, 2006:37).

Other recommendations consist of considering additional nurse-related variables in staffing-outcomes research, such as compassion and moral sensibility, both located within the process of care, and to evaluate their influence on patient outcomes. In addition, there is a need to measure systematically patient comfort, interventions to promote comfort and to explore the cost-effectiveness of these nurse interventions. Further research is also needed to explore cost dimensions related to patients' negative outcomes and the cost enhancement through the achievement of patients' positive outcomes.

Accordingly it is valuable to note that it is vital to review the paradigmatic approach to staffing-outcomes research to make sense about what is established as outcomes of nursing practice. The area of outcomes of nursing practice is one which requires nursing practice to be considered holistically in order to optimise nurse/patient care. It is important to review from a nursing perspective what nurses perceive and think should be evaluated as an outcome(s) of nursing practice, establish systematic approaches to their measurement and undertake further research studies to explore the impact of nurses on patient safety and on the quality care. Future research could valuably move beyond considering patient outcomes such as mortality and failure to rescue, and on to explore patient comfort, patient adaptation or the achievement of appropriate behaviour in relation to the patient's health, all possible mechanisms that could account for the observed staffing-patient outcomes and safety relationships. Moreover, as alredy suggested, there is a need to measure 'value', defined as outcomes relatives to cost, and to overcome the challenge of current organisational structure to measure value (Porter, 2010) as well as relevant outcomes for nurses beyond the influence of medical hegemony.

10.5. Concluding Comment

This PhD contributes to staffing-outcomes research in the specific setting of an HDU within the Spanish healthcare system and reinforces the importance and value of undertaking research in this area from both a quantitative and qualitative perspective. Study I replicated the methods most widely used in the literature, finding similar results.

Most importantly, this PhD examined the meaning of outcomes of nursing practice. Study II led to the construction of a substantive theory of patient adaptation through the promotion of comfort based on patients' and nurses' data. The grounded theory approach enabled theoretically salient insights to emerge that helped to understand the complex process of nursing care and the importance of the communication and relationship established between patients and nurses in the HDU setting.

These PhD findings suggest that the first encounters between the patient and the nurse are critical in setting in motion the first phase of this theory, that is, 'resolving adaptation'. From here depending on how nurses utilise 'powering elements' and how patients perceive the interactions with professionals and the family, a comfortable and safe environment can be built for the patient. This research also identified how important for the patient is the feeling of 'feeling cared for' by a professional nurse and of 'supporting elements' such as getting involved in her/his own care. Moreover, the findings showed that nurses value similar issues as the patients. Central here were 'facilitating strategies' including being sensitive and being with patients as well as keeping (the patient) calm, instilling confidence and knowing and informing patients.

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APPENDIX A:

The original language versions of the direct quotations, either in Catalan or Spanish

Chapter 7: Patients' Data	Page
P10- Sí, o sea, las formas son de que te van ayudando, te hacen sentir cómodo [...] te cuidan mucho son muy cuidadosas…. de tranquilidad.. Me tranquilizan mucho. Porque yo cuando llegué... yo estaba nervioso.... yo, nervioso... Se me aceleraba por los nervios. Entonces, ellas... 'Tranquilízate que... que aquí vas a estar bien... vas a estar muy bien'. Y la verdad, me han tranquilizado y estoy muy bien	145
P2- Vaig trucar al timbre... va passar... Va ser un drama [...] perquè si em deixa ben còmode jo no... jo no organitzo el que vaig organitzar... Jo només volia que vinguessin a que em posessin el llit bé	145
P4- Sí… A mi me lo ponen… me lo ponen… '¿Tienes el timbre a mano?' Siempre dicen 'Si te hace falta algo ahí lo tienes'. Sí.	145
P1- Clar, ja el demano jo... si se'n descuiden el demano per si necessito algo...	145
P5- Tengo el mando aquí por si pasa algo. También yo procuro no quejarme mucho para no molestar	145
P10- Siempre. Siempre está aquí. Lo aprieto y en un instante está ella aquí	146
P17- Les aviso i apareixen, però ràpid. Jo no veig aquí ningú a la Sala però pum-ba!! Vénen ràpid	146
P8- Pues que...¿qué me pasa?... si te falla algo... '¿necesitas alguna cosa?' No... Están... están muy bien preparadas. Sí	146
P4- Pero yo para una chorrada no les llamo. Hay gente que está cada dos por tres llamando	146
P12- Sí, Enseguida llamo... El timbre lo tengo aquí para llamar enseguida a medida que tenga cualquier cosa... Llamo y vienen en seguida. Ahora me dolía este brazo una barbaridad...[...] Entonces no había circulación. Pues en seguida ha venido la cardióloga y una enfermera de... de corazón... una... una doctora de corazón y han mirado, me han quitado la cosa esta y ahora estoy la mar de bien, ya. O sea, que te atienden pero que muy bien, ¿eh? Yo le he dicho a la niña esta que me pasa esto. Ha venido, me ha tocado, porque no podía mover los dedos ¿eh?... los tenía agarrotados	146
P2- No podia, jo no podia fer res amb tants cables i tantes coses que porto...	146
P18- Potser la única cosa que trobo és que deixen sonar molt les màquines	146
P4- Ayer estaba de los nervios. A parte, no podía dormir porque estaba mal, porque… pues porque las máquinas éstas no valen… no van bien [...]- Pues que se saltan solas y empiezan pi-pi pi-pi-pi…	146
P4- Es todo psicológico y de repente el fogonazo … que es…esto es como si estuvieras ya… a lo mejor se cree que lo estoy flipando ¿no?... Me recuerda a las salas aquellas de Hitler cuando metían a los judíos, que los iban a… a incinerar o a sacar.. el mismo fogonazo en la cara, que te quedas de momento… ¿sabe? Yo la veo excesiva…. y si la quieren conservar así, uno de bajar la intensidad…	147
P16- y no sabes que.. que ... como está el día. No te enteras. O sea, yo en.. en estas 4 paredes digo 'Qué tal el día? ¿Cómo está el día?'	147
P22- Nada, porque... es... Imagínate. Cierran todo y apagan la luz... Hombre! Estar aquí es... es como si estuvieras en una caja metida... Y es horrible. Mientras que si está un poquito la puerta abierta, pues tú ves la luz de fuera... Porque claro, yo me alumbro por la luz de fuera porque éstas son... muy potentes. Y entonces, pues te alumbras con la luz de fuera y parece que estás con el... como... más libre ¿no?... más libre. A pesar de que estás aquí dentro, estás más libre porque ves movimiento por ahí fuera. Pero si estás aquí encerrado parece que te vas a asfixiar... Yo, a mi me pasa eso	147
P22- Hombre! Yo estoy segura cuando está mi marido aquí. Pues yo me encuentro un montón de segura. Sí, sí, porque ya te digo que él lleva 6 meses conmigo. Él siempre ayuda cuando está aquí...	148
P17- A vegades un familiar No... Bueno... a veure, per exemple, jo cada vegada que em vull... que em vull incorporar o arreglar una mica el llit... això m'ho faig jo sola... i m'ho faig com puc	149
P22- Deberían de ser un poquito más flexibles, sabiendo como está que la única persona que tiene es él. Hasta incluso él, aquí estando pues ayuda ¿me entiendes? Y... y hay enfermeras que tampoco les gusta... No les gusta que... O sea, por eso te digo que depende de cada persona como sea... Hay enfermeras que no les gusta que esté...	149
P3- Ha hablado con mi sobrino esta mañana, al mediodía… Sobrino viene a la hora de comer,	149
P11- Pero cuando venga mi marido me pongo allí... tengo un apoyo, para pues si me voy para un lado, para el otro …para el agua, me enjabono un poquitín con la esponja y me pongo una ducha que me renueva...	149

P19- Para mí es necesario, porque yo entiendo que... Yo aquí estoy solito con mi mujer solamente. Pero... hay gente que tienen 90 y la mar... Y vienen toda la tropa... Y contrólalos!! Pobre... Pobre la gente!! Que viene... que... que sólo tienen que pasar 2 y hay 90 esperando... Simplemente si se meten aquí 90, ¿cómo trabajan las enfermeras?   149

P22- Hombre! Yo estoy segura cuando está mi marido aquí. Pues yo me encuentro un montón de segura. Sí, sí, porque ya te digo que él lleva 6 meses conmigo. Él siempre ayuda cuando está aquí... ayuda a limpiarme... ¿sabes? Colabora todo lo que puede... No es la típica visita que viene a verte y ya está   149

P13- Sí, yo... Me sabe mal todo lo que me ha pasado por mis hijos... porque hace unos meses se murió su padre. Y joder! Un palo! Nunca nos había pasado... a mi, nada. Y ahora es un palo detrás de otro. Pobres críos! Y me sabe mal, por ellos pero... A veces discutimos mucho con los hijos... Que yo no discuto con mis hijos, pero te das cuenta como te quieren ¿verdad?   149

P21- No. Mientras cuiden a mis hijos me es igual. Que vengan lo mínimo porque lo importante son mis hijos. O sea, que los cuiden a ellos, que aquí en principio a mí me cuidan O sea, que... bastante trabajo porque son dos pequeños   150

P12- Sí, sí, sí. Está bien controlada y sí. Mi hija la lleva... Ahora...ahora va el niño a buscarla al Centro de Día, se la lleva a su casa a cenar, luego la lleva a mi casa y allí va la niña y se queda con ella...   150

P11- Sí, de momento. A ver.... lo primero, que tengo la compañía de mi marido...Me preocupa a lo mejor porque a mi no me gusta mucho.... mismamente... lo que a mi más me preocupa que mi marido dice que está muy solo   150

P22- Y entonces pues mi marido, él está aquí solo... Está hospedándose en una... una casa de estas que alquilan habitaciones con baño... Entonces, pues el pobre pues,   150

P4- Hacen su trabajo y ya está. Y se comunican mucho entre ellas, se ayudan… se ayudan… 'Espera… ¿Te ayudo?... Vale, ya voy… tal'   151

P7- Si. jo veig que... que quan entres en aquí, jo les veig com si fossin un equip... perquè jo veig que s'ajuden molt les unes a les altres i això és un equip   151

P5- 'Hoy es mi primer día'... Y ella me ha explicado 'Sí, pero ya lo hemos hablado y esto tiene que ir por aquí y por allá'.   151

P14- Hoy, por ejemplo, es X ¿de acuerdo?. Pero después hay otras enfermeras que... que a lo mejor X no está y me atienden ¿de acuerdo?   151

P22- No sé... Y cosillas así ¿no?...que... No sé, no sé... No sé qué decirte... A lo mejor porque uno también está en la cama... te parece que examinas más y todo y... Cualquier cosilla te incomoda ¿no? ..pero...   152

P8- Hombre! Si... sí...sí. Porque no... no tienes ánimos de decir 'Bueno, pues esto … así, o esto debería ser asá'.   152

P21- 'Ponte una mascarilla'. Y yo dije '¿Y por qué me tengo que poner una mascarilla?'… Dice 'No. Es que lo ha dicho el médico' … y la vi un poco tímida e insegura. Pero la inseguridad me la transmitió a mí. Y a parte fue... fue incrementado con el tema médico   152

P14- A ver, esto lo captas en... en el... en el uso de aparatos. Ves la facilidad con... con la que ellas manejan el aparato. O no lo ves. O sea, ves enfermeras... Es que claro, tampoco aquí sabes quien es auxiliar de enfermería o enfermera. Entonces, tampoco puedes distinguir   152

P12- Pero... pero me gusta tener gente del país con la cual me pueda entender y que tenga mínima cultura [...] Yo creo que sí. Yo creo que sí. Según lo que dices lo entienden y a otros les dices y no lo entienden... lo mismo, ¿eh? [...] Se lo dices a cualquiera de este y sabe de que va, porque es la misma cultura.   153

P10- Me lo... me lo explicaron... dice 'Te vamos a hacer la transfusión de sangre. Tienes los glóbulos muy bajos. Te vamos a hacer para que... has perdido mucha sangre. Te vamos a hacer una...' ¿Cómo se llama? '... una... Te vamos a sacar una muestrica para ver si... si coincide con la sangre que te vamos a poner'. Me han hecho, me han sacado la muestra... Le han hecho aquí delante mío, le han echado el líquido y todo. Me dicen 'Sí. Es compatible con ésta. O sea, que te la vamos a poner. Esta transfusión de sangre dura tres... tres horas... tres horas y cuarto'. Y nada, me la han conectado y ya se ha acabado... la bolsa.   153

P10- Me sentía 100% seguro porque sabia que...que lo que me están haciendo es para un bien mío. O sea, que me están tratando bien…   154

P4- Pues con los pacientes es igual… Viene… venimos hechos polvo ¿no? Fatal... unos peor que otros... Y claro, tú lo que quieres es que te… te ayuden y… pues… un trato especial…No un trato ya normal… tiene que ser especial ¿sabes?... si vienes… si vienes mal… Y eso tiene… la enfermera tiene que saberlo… Para mi tiene que estar obligada a tener estos conocimientos técnicos… yo que sé… psico… psico… psicología o… o quizás le llamas psico… psicoanálisis o yo que sé… No sabe hacérselo una persona …   155

P21- No...si... Pero bueno, no te puedes sentar aquí a hablar aquí con las enfermeras. Ellas tienen qué hacer ¿entiendes?   155

P4- Yo a lo mejor pienso que no es ni… ni culpa de las enfermeras… A lo mejor es falta de una directriz que diga… 'Oye, mira… a los enfermos también hay que dedicarles un tiempo a ellos y decir cómo se sienten, naturalmente no físicamente sino mentalmente… si tienen un problema familiar que les está afectando   155

más...' No sé Hay muchas temas... empiezan por palabras tontas... '¿Tienes hijos?''¿Estás casado?'... tal... '¿Cuántos tienes?'... pum...'Ay! Pues mira, yo tengo una de 12 años como el tuyo' Hay que ir haciendo la toma de contacto ¿no? Y luego ya le vas apretando la tuerca y le vas haciendo preguntas más consecuentes y más durillas...

P8- Hombre! Ya profesionalmente las veo que... que... que no titubean en... en hacer las cosas. O sea, están bien	155
P12- ellas también se implican en el cuidado. Y eso es muy importante [...]...Es el primer contacto que tiene uno con... con... con la medicina aquí, y es muy importante que sean eficientes, que te atiendan, que te cuiden, que se preocupen por ti. Eso no se paga con dinero [...] Es muy importante la enfermera en un hospital. Es un intermedio entre uno y otro totalmente necesario porque....	156
P13- Que sí... que son muy... que son... que son superbuenas, que son supertrabajadoras, que te tratan con mucho cariño... que no les puedes echar... Nada... no puedes decir nada, porque no tienes nada que decir. Y si lo dijera... y si alguien lo dice... que no...[...] Pues no... Que no es ser enfermera y ya está... Que tienes que ser de todo. Tienes que ser simpática, agradable...	156
P14-... Entonces, una te arregla de una forma... te viene... otra te la arregla de otra forma... te viene otra... 'Pero quien te ha hecho esto?' Te lo arregla de otra forma...	156
P20- No, no... todas las enfermeras no se sienten la profesión una como la otra. No viven la profesión. Se nota enseguida como paciente que se percibe más que nadie si una persona ejerce su... su trabajo que otra persona que solamente pues está intentando pasar las horas lo rápidamente posible... ese, nota un paciente lo más enseguida	156
P21- Sí. Otros van más per feina y... evidentemente la vida de los pacientes no les interesa no es que sea importante [...]... Yo entiendo que sí, aquí hay mucha gente profesional... Yo creo que hay enfermeras muy profesionales. Y que se coordinan muy bien y que lo llevan perfectamente. Y esa persona pues estaba un poco despistada. Yo creo que a lo mejor se tendrían que... digamos ayudar a ese personal que a lo mejor tiene menos experiencia en la Unidad, para poder evitar y sobretodo, dependiendo de la personalidad de la persona, ¿no? Porque hay gente que es mucho más echada para adelante que otra ¿no?	156
P4- Yo trabajo en estadística, en el Instituto Nacional de Estadística y cuando tienes un fallo y tal, pasa... se corrige, pero aquí tienes un fallo y …pasa con uno y dejas una familia hundida, ¿entiende? Ellos tienen que saber que… que no es un trabajo normal, porque no es un trabajo normal…Es un trabajo superimportante, por lo tanto tienen que prestarle más atención ¿sabes? Bueno, yo considero eso…	156
P17- passes una estoneta més així... més... més distreta i més agradable	157
P18- ... per això que dèiem... un somriure, una cara, no?..agradable... que això dius, és lo primer que veus al dia...	157
P7- Clar, moltes vegades riuen, que és normal, eh? Perquè això també és normal... també t'alegren a tu... s'estan passant bé, no?.	157
P10- Para un paciente, para un paciente, si no hay un poco de buen humor, demonios, porque le levanta el ánimo, ¿verdad? Como he dicho al principio, no tengo ninguna queja	157
P19- Para mí el sentido del humor es... es lo más... lo más grande	157
P16- Claro, es importante. Tú ves una... un doctor o una enfermera con una sonrisa... te...te sientes protegido, alivio, confianza... Pero tú eres una persona seria, o sea, más no dices nada y te quedas callada ¿no? Porque eso pasa en el geriátrico donde trabajo... Hay personas que tienen el carácter fuerte, las personas... y las personas que trabajan... que trabajan... que trabajamos para ellos, se sienten cohibidos y... dicen así ¿no?... se quedan.... Al menos, a mí cuando me ven se ríen... 'Ya está nena, que ya vino' Siempre paro riéndome, haciendo mis cosas...	157
P21- Hay algunas que sí, que muestran sentido del humor. La verdad es que es importante. Es bastante importante	157
P4- No… Es de la persona… nace con la persona. Sí. No, porque también hay alguna chavalilla… las hay jovencillas que todavía no están muy… muy asentadas ¿no? Hacen su trabajo pero de una forma más light, pero lo hacen… pero son jovencillas	157
P2 - No he estat mai ingressada, però hi ha gent formidable. Una joventut guapíssima perquè són gent que... que ho fan perquè els hi agrada l'ofici... perquè o si no, no es pot fer	157
P2- Només demanava que em vinguessin a posar còmode al llit i no... ningú venia... només venien perquè jo callés... Si... que no cridés que hi havia malalts... Clar. Jo només demanava 'Per favor, socorro'. SI jo nom.... és que no demanava res més. És que volia... Clar, vaig vindre i... i tal com me va deixar el llit jo no podia dormir a la nit...	159
P21- Me atiende tal médico. Por favor, si le queréis avisar que estoy aquí'. Ya no volví a insistir era como decir... 'A mí que me cuentas. Yo no voy a llamar a nadie'.	159
P21- Y dices 'Bueno, pero nada...'. Eso entonces fue lo de menos, de verdad. Estás aquí para que te curen y... y ya está.	159
P11- Digo 'Pero vaya, esto se quita enseguida'... Dice 'No, no... Ya volveré en otro momento'... 'Entonces,	159

mañana les digo que no me pongan la faja y ya estoy preparada para cuando usted entre'... Digo... 'Ve que esto es muy fácil... es muy fácil de quitarlo'...

P6- Passa això, no? ehhh... Lo que trobo malament és... la falta de coordinació.... la falta de... O sigui, per exemple, la... la última que m'ha passat ha estat que tenia una prova de.... em tenien que fer una prova de...[...] ... em van tindre tota la nit sense poder beure aigua ni res... tal i qual... La suspenen a les 10'30 del dematí. Ahir... ahir torn... Avui tornem-hi... La tinc a les 8'15 i eren les 10... Jo...jo he protestat... he protestat, eh? perquè sóc una persona que considero que aquí estan tractant amb persones i que tenen que tindre una mica més de cura. I no tothom té aquesta cura... entén? O sigui, hi ha... trobo que hi ha un personal que un... un percentatge és bo... que tenen experiència i... després hi ha molta gent... i molta gent que no vol treballar... perquè per això estem a... estem a lo que és la societat avui dia, eh?. Vull dir... Jo crec que això està ben estructurat, funciona i tal... però fallen les persones... les persones... No en el tracte sinó que fallen les persones però no sé per què.... pues perquè no donen més de si, perquè...aquest dematí quan m'han fet la radiografia de ... He sortir d'aquí a les 8'25.... he tornat aquí a les 10'30. Mira.... bueno.... una d eles coses que m'ha fet protestar es que... bueno, m'han la... la eco... En aquest cas tinc... tinc el meu torn... tinc que esperar-me... això ho sé. Ho assumeixo encara que no m'agradi però ho assumeixo perquè estem ... tothom... està tot desfà... O sigui, falta gent o falta lo que sigui.... Ehhh.... Lo que no em sembla bé és que una vegada acabat allò, traslladar-te d'un puesto a l'altre, que és mig minut... et tinguin 40 minuts esperant allà assentat, en dejú... tal.... Per això.... o sigui... M'explico? | 160

P12- [La enfermera] que ha venido,... en seguida me ha tocado en el sobaco, me ha tocado por todos los sitios y eso quiere decir que sabe lo que tiene que hacer. Y que alguna otra vez se ha encontrado con un algún otro caso similar ¿no? ...Pero van a buscar a otro [medico] para que les solucione...No, no ellas también se implican en el cuidado. Y eso es muy importante | 160

P21- Pues la verdad es que me atendieron bastante rápido. Todas las que había aquí... Ya me pusieron todo lo que ellos necesitaban para esta Unidad y por mi situación. O sea, que actuaron bastante rápido | 161

P10: 'Aquí, yo lo tengo. Vienen en seguida. A diferencia de otros hospitales...haces sonar y así, tal vez les toma10 horas. No, no. Aquí llamas, y les toma dos minutos a lo sumo, ¿eh? A lo sumo. Y como he dicho, muy bien, muy bien. En todos los aspectos...' | 161

P17- Ja, ja... Bueno, clar, jo els dos primers dies que estava aquí també... per aixecar-me i això... Segons els metges tampoc estava en condicions... però això que t'hagis de... que t'hagin de netejar en el... al llit... Això ho he portat bastant malament. És que fa tants anys que em faig... que m'espavilo jo soleta que en fi, em sentia una mica aix[cohibida, saps? Inclús els hi anava demanat 'Ai! Perdoneu... no sé què...''Tranquil·la, si és la meva feina'...Dic 'Bueno, però...' | 161

?P8- Bueno, pues cuidar bien, atender bien al enfermo, si lo tienen que lavar, si lo tienen que arreglar, si lo tienen que.... es... es... es una base también importante ¿no? Yo creo que sí... esto es importante. El enfermo lo que necesita es... claro, que... que... que le cuiden ¿no? ... Necesita esto, necesita lo otro.... porque cuando uno está enfermo es fatal, no te defiendes de nada.... Eres.... eres un... un.... No eres nadie | 161

P11- A mi importante eso, que estén pendiente de ti, que te...que te cuiden como una enferma que eres, una persona que necesita ayuda de... de otros. Eso para mi es lo más importante... Me limpian, pero bien limpia...pero que bien | 161

P15-... I les infermeres tenen molt ... molt a veure el que trobo més còmode per ... Ells són molt amables, com he dit abans, molt útil | 161

P14- No. Automáticamente. Primero porque no me lo dan... No. Automáticamente, no. Esperan a... A ver, si tengo mucho dolor y tengo fiebre y tengo mucho dolor, sí que se lo pido. Pero automat... pero si tengo un poco de molestia o un poco tal, no te lo dan automáticamente | 162

P3- Porque a lo mejor tienen más pacientes y... y tienen trabajo. Yo digo... digo yo que será así, porque sino... Dirán 'Cuanto antes acabemos, vamos a otra y así... a otro' Van... pasan vía... rápidas. Cuando acaban de mi pues se van a otra persona, ¿no? [...] A escape y que lo acaben cuanto antes... que vuele, que vuele... cuanto antes me lo limpian y me secan... ala!! Yo volando que se lo hagan a escape | 162

| | 162

P3- Claro, porque ellas van de prisa.... van de prisa y no te vas a poner a darles aquí una conversación de.... como le explicaba yo a mi pariente el otro día y así. Las veo que van... las chicas están por su faena y no son para escuchar al paciente ni... ni... | 162

P12- el trabajo que tienen que es un momento: te atienden y se tienen que ir. No es una tertulia. Diferente que estuviésemos ahí en el bar ese tomando una... una cerveza ¿no? Es otra cosa | 162

P5- Hombre! Me han estado controlando todas las noches y todos los días, cada media hora o cada hora... como me han de pinchar tantas veces y tantas cosas... O sea, que en mi caso sí que tienen que venir muchas veces. Han sido muy efectivos y todo muy bien | 163

P8-Las enfermeras son... son... son muy atentas... son muy atentas.... mucho. Son las que... las que más ehhh.... no sé... las que más tiempo pasan con el enfermo... las enfermeras... pasan más tiempo que...pasan mucho más tiempo. Porque además, mientras te van haciendo las cosas, vas explicando... | 163

P14- Sí o no. A ver, hay cosas que sí y hay cosas que.... Hay cosas que no te las dicen o si van muy atareadas.... todo esto. Y eso también se comprende.... Lo que a ver, tu eres paciente, pero no eres el único paciente, aquí hay 50 pacientes. Entonces, eso lo comprendo perfectamente. Pero es el trato de coger y decirte ehhh.... '¿Que tal, X?' y decírtelo con una sonrisa y todo esto que te hace sentir un poco más cómodo. Y más en un sitio donde las visitas están muy, muy cortadas y... este...Seamos sinceros, esto es un aburrimiento.	163
P4- Es que el cariñito es muy importante estando aquí a dentro [...] eh que si, como una pastillita que te alivia un poco. Porque si encuentras, como digo yo, a enfermeras que son unas perras que tal… que te tratan a base de latigazo… pues como que no, ¿no?	164
P20- la atención es muy... para el paciente es muy importante...Que te sientes bien y te sientes bien atendido. Realmente pasas muchas horas a solas y puedes pensar... Y entonces, una atención positiva por parte del... de la enfermera, de los enfermeros en general... o del personal sanitario es importantísimo para el paciente	164
P12- que te cuiden con respeto, con amabilidad, con cortesía. Todas esas cosas... tiene que tenerlas una persona. No sé puede tratar una persona que está enferma como vulgarmente se dice 'como a un perro' ¿eh? No puede ser. Tiene que ser... con amabilidad. Y tienen trabajo estas criaturas ¿eh? porque trabajan mucho ¿eh?	164
P18- És que de fet, quan entres en un hospital, si l'atenció és bona i la gent és bona, lo altre és totalment secundari... Al menys per mi. Per... Les instal·lacions si fossin... Són molt maques però si no fossin tant bones i la gent igualment fos competent i bona, estaria igualment bé	164
P9- Dic 'Perdona noia'... No, la de les cames no va tindre disgust... Dic 'Perdona noia'... Dice 'no...'. Me va dir 'Lo siento por usted, no por mi. Porque a mi, mire, se me ha manchado la bata, pues ya se lavará'.	164
P4- También es importante el ánimo. No sólo la atención de que te limpio el culo… porque eso… y tal. Darte ánimo y tal '¿Cómo has pasado la noche?'… '¿Te duele algo?'… ¿Sabes? … '¿Va a venir tu familia?'… Cositas así. Las pequeñas cosas son las que hacen las grandes ¿sabes?	164
P5- Hombre!! Ahora me ha puesto... me ha buscado una posición... y si le pido me ayuda a buscar otra posición esto..	164
P10- ... de tranquilidad... Me tranquilizan mucho. Porque yo cuando llegué... yo... nervioso.... yo, nervioso... el corazón se me estaba bum-bum-bum	164
P19- Primero no hablarme de lo que estaba pasando en ese momento, sino me empezó a hablar de la zona azul simplemente, o la zona verde... Sacarme de mi... del problema que yo estaba en ese momento y sacarme a fuera. Mentalmente... cuando uno está mal, lo que... es... focaliza lo que tiene y cada vez se agrava más... Y él lo que hizo... lo que... inconsciente o conscientemente fue sacarme cualquier historia para fuera... 'La zona azul... que si nos cobran muchos impuestos, que vengo en moto...' Y quieras que no, eso te tranquiliza.... ¿por qué? Porque no estás pensando en 'Tengo un problema' sino en que te están ayudando en... en el hecho de... estás afuera... estás tranquilo, porque tu mente está... ehhh.... trasladándose a fuera ¿me entiendes? Y eso te da tranquilidad.	165
P2- ... i un coixí als peus. agafa el llençol i me'l deixa així, però no em va... lo d'aquí del capçal del llit jo volia... perquè sempre t'acomoden... si el volen més alt o més baix. I ahir va marxar i no m'ho va dir. Jo vaig pensar bueno, és que se n'ha anat i és que tenia alguna cosa que fer i va agafar la carpeta del metge... la taula aquesta estava allí i diu 'Ara aniré a cridar el meu metge'... perquè és que per ella, tal com me va deixar el llit ja m'havia deixat perfecte [...]Només demanava que em deixessin el llit bé... però aquesta... per a aquesta infermera, volent dir...'Ai! Què vol més?'Em vaig quedar...que no m'ho podia creure [...] 'Oh era això per ella el llit estava ben fet' [...]i el que havia d'estar en silenci, que hi havia gent malalta que farà que ja estaven en repòs, i dic 'jo també sóc una persona malalta i estic indefens'	165
P7- quan em van posar la via ja em van dir que.[...] 'Mira, ara li tenim de posar una via perquè [...]m'ho va explicar que jo ja ho sabia, però bueno, va tindre la delicadesa de..dir 'Mira, ara li fem això'	165
P22- Pues eso mismo... que vienen y hablan contigo y te dicen 'Tú no te preocupes... tú no te preocupes...' Es que... es que esa enfermera que te dice…'Tú no te preocupes. Yo lo arreglo, te pongo limpita... te hago esto... te doy… las pastillitas' Y me cuenta Y ves tú que lo sabe todo. Sabes que no tienes que decirle nada.. que ella sabe...[...] Hay personas que te dan más seguridad... y hay otras personas que no te dan tanta seguridad. Hay enfermeros y enfermeras que dices 'Oye, me encuentro relajada y puedo dormir tranquila porque esta persona me parece que tiene mucho ¿sabes? Tiene mucho de todo lo que a mi me sucede'.. Pero a veces dices... pues te quedas así...	165

P22- Claro, porque yo veo que esa persona sabe, pero cuando viene y te dice 'Uy! Esto tal y esto cual' Pues te quedas así... Dios mió... te quedas parao. Dices 'Y esta persona ¿me va a cuidar esta noche?' Pues es que te quedas pensando... por eso te digo que.... que hay cosillas que uno ve que dice '¿Cómo es posible, no?' Pero bueno, es lo que hay...[…] Hombre! Yo estoy segura cuando está mi marido aquí. Pues yo me encuentro un montón de segura. Sí, sí, porque ya te digo que él lleva 6 meses conmigo. Él siempre ayuda cuando está aquí... ayuda a limpiarme... ¿sabes? Colabora todo lo que puede... No es la típica visita que viene a verte y ya está … Y muchas veces también otra cosa, que... que yo sé que hay unas normas en el Hospital ¿no? Hay unas normas. Y al principio pues.... Aquí hay un horario ¿no?.. que es de 1 a 2, de 7 a8 y de 10 a11... Y entonces pues mi marido, él está aquí solo... Está hospedándose en una... una casa de estas que alquilan habitaciones [...] se salía de 8 hasta que se hicieron las 10... se quedaba por ahí fuera esperando y yo digo 'Dios mío... deberían...'

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P23- Sí, porque... Ya te digo.... porque muchas veces yo no llamaba porque... Ya te digo que... yo... yo creo que más que lo que me pasó, debió ser la medicación que estás medio sedado todo el día ¿no? Y yo no sabía ni donde estaba la perilla aquella... Luego ya me enteré que la tenía... además a un palmo de mi nariz... Pero... pero entraban... pero muchas veces entraban, tanto el chico como la... Entraban pero no para... para... para... ni para extraerte sangre... Simplemente entran para decir '¿Cómo estás X? ¿Estás mejor?... Ala! Venga te dejo'…Para mi eso era importantísimo. Joder! No puedo estar con mi mujer por... y me quedo aquí solo... que estaba ahí espatarrado, con los huevos al aire y... y... allí todo el mund... que no me enteraba de nada... y por lo menos, entra una persona, te saluda, te... No... ¿No lo agradecerías tú?

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P7- Home!! Jo m'he sentit segur perquè ja he vist que elles de seguida han vingut, m'han agafat així... una m'ha dit que respirés... Clar, jo, a mi m'agafa això... a mi no me l'havien explicat, no? I... i em comen... començo a tossir, vinga a tossir, tossir perquè no he tret res, però sembla que ella m'ha dit de seguida 'No, no... respiri fondo, respiri hondo, respiri hondo' I al respirar hondo pues em sembla que la tos aquella me s'ha parat, no? [...]Sí, sí, sí... Les dues que hi havien m'explicaven això, no? 'No es preocupi, no es preocupi que això és un moment... Ja veurà com li passa de seguida' I efectivament

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Chapter 8: Nurses' Data   Page

AS1- ... és el millor per dormir-hi, aquell racó allà. Si estàs bé, per dormir és el millor perquè sents menys   178
soroll

AS4- Però dóna la sensació ,és de... de cubicul, com que no hi ha finestres, és més un quadrat.. que si tes   178
les... com es diu això? Les...

NS6- I després la visualització d'alguns boxos...O sigui, moltes vegades t'hi has d'atansar a no ser que els   179
tinguis, just els del davant o just immediatament els del costat, però els del darrera... O sigui, has d'anar... I
si tens un de desorientat allà... malament ja... perquè o et plantes allà tota la nit o... o has d'estar aixecant-
te contínuament, vigilant, per mor de que (= per tal que) no hi hagi algun problema.

NS6- ...Has de donar una volta... que dius 'Vaja volta que he donat per anar a buscar un Primperan!'... Un   179
Primperan!... Qui diu... qualsevol altra medicació... un Atropina, o el que sigui... I... i això és el que et fa a
vegades anar amb... amb més estrés... perdre ,és temps, no? a l'hora de ser ràpids amb la nostra tasca

MS2- Va haver-hi un familiar que em va dir que pel seu marit era tant important que això el desbaratava   179
molt i varem quedar que els seus néts... fills, perdó... dibuixessin un sol i una lluna al costat del
despertador que tenia. Li posàvem el sol si era de dia, li posàvem la lluna si era de nit. Imagineu si és
important. Això.. això és una... Bueno, és que... ho sento molt... em fa ràbia...

MS3- Y otro problema es que la luz, a parte de ser eléctrica, es tan intensa... tan intensa que muchísimos   180
pacientes acaban pidiéndote, al cabo de media hora, que les dejes a oscuras, porque no soportan la luz

MS1- M'agrada la nova unitat perquè és nova, és còmoda, que els malalts estan més confortables   180

AS2- Tu pots programar el que vulguis en aquest monitor... pots programar el que vulguis i això...   180
Evidentment... evidentment el... el pito molesta... perquè hi ha vegades que pita per alguna cosa que no és
important... però hi ha un so important que és imminent, que tothom li fa cas... És molt distingible el 'pi-pi-
pi' tonto...

MS1- És la reivindicació que teníem... que no ens les trobàvem revisades com crèiem que havien d'estar. I   180
això, jo és de lo primer que faig. No sé si és reflex, si és... És una manera de... de com organitzo... Jo
necessito primer, abans de començar a treure medicacions i no sé què i no sé quants i pensar si el rentaré
o no el rentaré... primer saber quina cara fa el malalt i com ha passat la nit, com està. Lo primer. I a partir
d'aquí, llavora'ns me'n vaig a preparar medicacions, vaig a prendre constants i ja començaré a banyar

MS2- Aquest joc a mi m'agrada. I això sí que és veritat, jo he treballat a altres llocs i aquí a Sant Pau, ho   181
haig de dir, l'equip d'infermeria sempre ha tingut autonomia

MS1- Jo us seré sincera. Jo no me n'he anat a treballar a Mataró per una de les.... A mi em seria molt   181
pràctic.. Ja arriba un moment que ja tant de desplaçament... és... és raonable 30 km, però cansa... Per això,
per la manca d'autonomia de... a nivell de la feina a altres llocs.

MS2- Jo em sento... jo em sento molt responsable de la meva feina... I sé que un dia puc anar a un tribunal   182
[ ] Jo sóc conscient que un dia me'n puc anar a un tribunal, perquè he fet una mala praxis... mal judici de
valor... hi puc anar-hi. Però a mi m'agrada sentir-me responsable de la meva feina... O sigui, m'agrada
decidir, però amb tot.

MS8- La verdad es que... es que yo nunca me había dado cuenta de lo determinante que es la estructura   182
de un sitio a la hora de trabajar... Porque siempre lees... 'la estructura determina'... Pero hasta que no ha
habido un cambio de estructura... no... te... no te das cuenta pues que sí... sí que determina muchas
cosas..... Pues determina pues, que no haya una persona continuamente dentro... Que haya muros, que no
puedas verlo todo...la estructura no ayuda, ...Un grup que... que està dividit i poc temps per reflexionar i
per... I has de córrer molt. I llavora'ns, totes aquestes coses pues, se van sumant

RN1- Bueno, el model d'infermeria és bueno, un model basat molt en l'autonomia de la infermera. La   182
infermera és molt autònoma. Té bona capacitat de decisió amb lo que és les cures del pacient.

NS5- No... Però aquí també... ten... tenim la... la sort és que a nivell d'infermeria tenim molt autonomia   182

AS6- Jo crec que un líder és necessari, però que tampoc el líder es cregui que és el líder, sinó que... que   183
sapiguem que... que pots anar en ell per... o en ella per... pel que necessitis,

RN2- Crec que seria important una... la persona que dirigeix... A veure, el... tingués.... O sigui, a veure... sí... 183
Falta algú que... que... que dirigeixi a l'Equip i construeix una mica més de sentiment de grup, de sentiment
de... de millora, de sentiment de ganes de... de... 'de anem endavant. Millorem. Progressem. Formem-nos.
Intercanviem. Discutim, si cal. Posem casos d'infermeria' O sigui, falta un lideratge aquí...

I com a companyes se.. que puc aprendre d'elles... que són bones amb el tracte, respecten... Penso que fan
bé i són responsables de la seva feina... Què m'agradaria? M'agradaria més la intenció. M'agradaria més
veure unes ganes de no quedant-se (=quedar-nos) estancades; de que la professió pot anar més enllà;de
que la Unitat pot anar més enllà.

AS2- De totes maneres, penso que el torn de la tarda, en aquest sentit, té una cosa positiva... per lo.. lo   183
que jo veig, és que som bastant tolerants amb tothom.... amb diferents formes de treballar. No perquè jo
cregui que es faci 'així', l'altre ho ha de fer 'així'. Vull dir, que hi ha formes de treballar, que el resultat és el
mateix però la tècnica poder (=potser) és diferent. M'explico? Home! A la tarda jo crec que funcionem en

equip.

AS7- jo què sé... si jo tinc molta feina, jo tinc que fer els meus malalts, arreglar-los el llit o lo que sigui, o fer una cura i jo no puc i jo què sé...	183
AS1- És veritat que... Jo considero, no? Que a més és això. I es treballa molt en equip i que pots comptar amb els altres de seguida. Vull dir que si necessites alguna cosa, pots comptar amb els altres i això és important. I en d'altres torns es troba a faltar, no?	183
MS3- la estabilidad de las plantillas... Es de riesgo. De alto riesgo ...están viniendo tantos niños del año pasado frente a un veterano... Un veterano, tres niños. Eso es de alto riesgo. Y es irresponsable. Meteremos muchas patas, muchas. Haremos mucho daño en estas condiciones.	184
MS4- I un sistema que tampoc t'ajuda porque somos... somos números... Tiene que haber 4 y tiene que haber 4 en cada Unidad. Y falta 1 en la UCI y se va... 'Ah! Pero no te preocupes que te envío una...'. Da igual quien sea, o sea 'Te envío una' . Vale. La que acaba de acabar.. No te preocupes que te vamos a enviar una enfermera' Y luego, la enfermera que me viene no sabe ni lo que es un paracetamol	184
NS5- Potser lo que és menys estable ara, seran les suplències. Abans teníem una plantilla de suplències que sempre eren els mateixos. Es coneixien bé la Unitat i...	184
MS4-... pero cada día invertir tu tiempo y esfuerzo... Tú, un día... y al día siguiente lo vuelves a explicar lo mismo, y al día siguiente lo vuelves a explicar lo mismo... Y tú también tienes tu faena por hacer ¿sabes? No te puedes cargar con toda la Unidad en la espalda...	184
AS7- Crec que no tenen la mateixa confiança perquè no veuen sempre la mateixa gent i... és com que tu li has de demostrar que poden confiar amb tu, I quan semblen que comencen...clar, és...	184
MS3- Eso es una... eso es una obligación imperiosa... Quiero decir, si tú eres profesional de enfermería de ese paciente, tienes que conocerlo por narices... no puedo decir decir 'No tengo tiempo. No lo conozco'.	186
Todo,,,Puedes decir 'No lo he lavado'... pero no 'No lo conozco' Evidentemente todo no, pero … Tú eres la que lo conoce la verdad. Los demás no se los conocen. Y tú sabes perfectamente cuando ese paciente está corriendo un riesgo, está teniendo una necesidad. Y o te mueves tú para conseguirlo o puede tardar horas a llegar. Eso es lo que hacemos.	
MS1- tenemos una visión más amplia y global del paciente, una de las cosas que siempre hago con los pacientes es una vez revisado el cambio de turno me acerco a saludarlo y me presento	186
RN2- És un esforç... és un esforç... és un esforç... que a més, a la nit posar-te a llegir i concentrar-te... la capacitat no és la mateixa. I... la variabilitat del malalt... a veure, jo et dic... m'agrada el fet de que hi hagi diferents patologies. No m'agrada el fet de que cada dia t'hagis d'aprendre tants malalts diferents. Això, al menys, a mesura que ja vas tenint més edat, retenir al cap tot una història del malalt... cada dia haver-te d'aprendre 3, 4 malalts... Si te'ls vols aprendre així bé... ehhh... és un esforç... És un esforç perquè a més, això és una cosa que a més m'agrada fer un cop entres, perquè passi lo que passi durant la nit, tu ja saps tot sobre el malalt.	186
AS4- ...especialment amb els malalts crònics , ells s'ho posen, s'ho munten, saben si els hi va bé per aquí, si els hi va bé per allà, a l'hora que s'ho posen i no s'ho posen. I com que ja ho porten de casa, s'ho tornen a emportar a casa... també amb els malalts hematològics	187
NS1- entonces intentas hacer lo que ellos tienen... Intentas seguir las curas que ellos tienen en casa. Yo sí las intento seguir porque es como más cómodo y más seguros van a esta. Si son correctas, claro, y en este momento son idóneas...	187
NS6- Jo he arribat... he arribat a la conclusió... després... després del anys que porto, que si al malalt l'informes de... del que li vas a fer... simplement encara que li diguis què li vas a fer i per què li fas... al malalt li treus... bufff	187
NS3- No... pues això... informar, depèn dins de... de la mesura, perquè també una sobre informació també pot posar nerviós a... a un pacient, saps?	187
AS1- I et comencen a explicar coses i... no? I a part, no? sembla que els fas participar, no?	187
NS1- entonces intentas hacer lo que ellos tienen... Intentas seguir las curas que ellos tienen en casa. Yo sí las intento seguir porque es como más cómodo y más seguros van a esta. Si son correctas, claro, y en este momento son idóneas... Sino, pues intentas convencerles de lo que estás haciendo es mira, buscando soluciones...	188
NS6- I amb això bueno, s'afegeix l'empatia, no?.. que tu tens amb aquell malalt. Ficarte amb la seva... de vegades no... no ho fem sempre. Perquè jo... jo no ho faig sempre però a vegades dius 'Ostres!' I a veure si... jo em trobés en aquesta situació, estigués aquí al llit i a expenses del que em facin i del que pugui rebre... Estàs molt receptiu. Ho sents tot.. Sents tots els sorolls, alarmes, comentaris... Qualsevol cosa... És que és... és un altre punt de vista, és una altra perspectiva la de la persona ingressada. És que canvia molt. Llavors s'ha de tenir en compte això. Està sol en un mitja que no és el seu, que no coneix i amb una gent desconeguda. Llavors és clar, és lo que...és lo que dèiem, no?.. restar angoixes, restar... donar-li seguretat, lo que puguis i... i fer la feina al 100%... al 95% bé, no?..en aquest sentit. No sé...	188

Pues això... entro, miro el malalt i valoro. I... i vaig veient coses, no? Pues repasso tot... Parlo... Primer em

presento...ehh... Igual em diu 'Necessito alguna cosa'... 'Com es troba? Té dolor?' I ell em va dient 'Ai! És que no sé. Tinc aquí darrera... No sé cuantos..' I bueno, vaig començant a fer coses, no?

Mentre estic a dintre vaig... vaig observant. ...quantitat d'angoixa increïble. Perquè ja prou que està amb molt dubtes de... del què li passarà demà, com aquell que diu...perquè a sobre pensi 'Què m'està posant ara?... Què m'està fent?' Jo sempre l'informo... intento informar-lo molt. I ho tinc comprovat, eh? Es redueix moltíssim l'angoixa i..informant-los explicant-los les coses

MS8- ... Según que enfermera lleve al paciente, ese paciente va a ir bien o va a ir mal	188

MS7- Incluso a veces te saltas las normas...Y a veces dices 'Vale. Es un niño pequeño ¿no? Es el nieto, pero hace días que no lo ve'... O como, por ejemplo, tuvimos un... ahora está un abuelo que hizo un síncope en la calle, iba con la nieta de 4 años y estaba preocupadísimo, el hombre, porque claro, fue la nieta la que.. la que avisó... Iban los dos.. Y él estaba preocupado por su nieta ¿no? Pues bueno, la... la criatura pasó... pasó y estuvo con él. Aquí están muy solos, muy aislados, con poco rato con las familias que... se... se encuentran solos, la verdad.   188

RN2- com... com... casi com un actor i... i de demostrar-li que... que tenim que... que actuarem ràpid, que en spreocupa però que... com que tot ho vas controlant una mica i que tal, no?   189

NS4- Jo crec que el llenguatge corporal nostra, eh? També... La nostra actitud. Vull dir que si ens veuen més o menys segurs... La informació crec que sí, perquè si tu li dius...   189

NS1- Sino, pues intentas convencerles de lo que estás haciendo es mira, buscando soluciones...   189

RN2- O pots... pots córrer al mateix temps que... Jo tinc aquesta percepció respecte a dues coses... Sí... ehhh.... Exacte, jo crec que a vegades per córrer molt fas... eh?... poder (=potser) algun pas... que bueno, el pots fer exactament amb més tranquil·litat i enfoques més... prens una decisió millor... ehhh... I jo crec que poder (=potser), que és lo que et deia, que... que... que això a lo millor és una teoria meva... O sigui, és una forma d'actuar meva i podia ser molt, molt criticable. Suposo que és criticada, eh? Jo sí... jo és lo que et deia abans... Jo una mica cada cosa que es fa amb el malalt...   189

NS1- ...s'esveren mucho al ver la sangre. Dices 'A ver...' Claro que le explicas la técnica, claro que le explicas lo que está pasando pero yo también muchas veces les digo 'La sangre es muy escandalosa y usted lo sabe'. Entonces les vas mentalizando. Como te ven tranquilo, con él... allí haciéndole lavaditos y tal, en plan tranqui... Dicen 'Pues no debo de estar tan mal'. Y como te ven allí al lado es como que... que no... no se siente solo... no se siente...   189

MS3- '¿Para que voy a sentar un paciente?... Si supone un esfuerzo y nadie me ha dicho que lo siente' Yo decido si se sienta o no se sienta un paciente. Evidentemente. Depende de mi. Yo lo conozco mejor que nadie y yo sé si se tiene que sentar o no. No tengo que esperar a que el fulano me diga 'Éste ya lo podemos sentar' es mi elección.   190

MS3- ¿No hacen porque no les dejan o porque en el fondo es más cómodo? Porque es que eso te lo encuentras aquí también   191

La falta de... la falta de implicación porque... A ver, muchas veces es muy cómodo... En vez de pensar, decidir y...

MS4- Bueno, te quitas responsabilidad   191

NS4- Clar, vull dir... jo crec que de vegades... a vegades hi ha problemes d'inexperiència i altres vegades de falta de responsabilitat. Que no és lo mateix, no? Manca de responsabilitat, no és un problema de coneixement, no crec que sigui un problema de coneixement és d'actitud huh? Manca total de responsabilitat perquè tots tenim manca de coneixement .. manca d'experiència vull dir huh?   191

RN1- Clar. Clar que ens paguen per pensar... Ostres! Si no pensem anem-nos-en a una cadena de treball, que potser fins...fins allà hauríem de pensar a lo millor, no?   191

NS6- però a mi em preocupa... a veure, de cara a les suplències... algunes molt bé, eh? Hi ha gent que és molt vàlida. Però a mi em preocupa aquesta falta de... de previsió d'urgència o emergència. O sigui, que... que, a veure, si estàs... Estàs en una Unitat de Semicrítics, vale? Però si estiguessis en una Sala també tens que tenir aquesta capacitat de valorar el malalt... A veure, què li està passant, perquè està ingressat, que li pot estar passant? ... a grosso modo. I actuar. O sigui, el que no pot ser és pensar que aquella persona està fent cuento, està cridant l'atenció. Això no... Jo no ho admeto això. M'entens? Llavors, això sí que em preocupa... una actitud de... de despreocupació. O sigui, no estem aquí... 'Sí, sí, sí'   191

NS4- Clar, hasta que tu no entres i veus i dius 'Truca al metge perquè aquí passa algo'   191

NS2- I al final li vaig dir 'El malalt és teu. Ves a mirar-te'l' Dic... 'Que hi hem anat tots i tu no en fas cas'... 'UY!... es que... es que está... es que este... No m'agrada... és que no m'agrada estar aquí'.... Digo 'Bueno, pero estás aquí'. Vam passar una nit... que bueno, el senyor es va intubar...   191

AS5- Claro, pero te quiero decir que... que cuando ellos tienen un problema, pues buscan a quien sabe que se lo va a resolver   193

AS6- Home! Es treballa diferent, no? quan tens algú que porta molts anys treballant. Tens la seguretat de que porta una persona que té molta més experiència que tu i que... i bueno, tens la seguretat que si passa qualsevol cosa, saps que aquesta persona respondrà i respondrà bé.   193

MS4- ... Y a ti nunca te han dicho... has llegado por la mañana y te han dicho 'Ay! Que bien que hayas llegado tú', no son los años tuyos sino los años contigo | 193

MS3- Te conocen saben como trabajas Es el tiempo que llevan contigo y el conocimiento que tienen sobre tu profesionalidad | 193

Según quien, frente a un ingreso te dirá 'Ves haciendo por lo grave que sea que yo ya vengo'... Y habrá quien no le deje entrar en el box mientras no lo haya visto. Depende de la confianza que tienes en esa persona y no de la edad

NS1- Lo cierto es que los protocolos los hemos hecho muchos años después, cuando ya teníamos el trabajo mamado... ... interiorizados los protocolos que no nos damos cuenta que trabajamos con protocolos | 193

NS4- és una reflexió ja feta, no? I llavorens jo crec que apliques la intuïció en moltes coses. Vull dir, inclús en la expressió del malalt aquesta... dolor... com estic?... com no...? M'entens? | 193

I quantes vegades els hi fas una valoració que deien intuïtiva o subjectiva... 'No m'agrada aquest malalt'... Quantes vegades? I quan el metge et diu 'Vols dir?'... 'Mira... ', no?

AS2- Humilitat. Home! Jo buscaria algú que els coneixements fossin superiors als meus | 193

AS2- A la tarda jo crec que funcionem en equip. Evidentment cada ú te les seves circumstàncies personals que aporten i desaporten en... en moments puntuals, però jo penso que funcionem en equip... No tenim... Tenim uns malalts establerts però no vol dir que els altres quedin desatesos en un moment puntual perquè l'altra infermera està fent una altra cosa o que no arriba... I es necessita treballar així, sinó no ens en sortim | 194

AS1- I es treballa molt en equip i que pots comptar amb els altres de seguida. Vull dir que si necessites alguna cosa, pots comptar amb els altres i això és important. | 194

AS6- I això implica molt també... això, amb qui estàs treballant, no? Moltes vegades si jo no sé fer una cosa, depenent amb qui estiguis treballant, pues és més difícil comentar-ho, no? de que puc dir una barbaritat y no me miraran mal o se reiran.. | 194

RN1- A veure, hi ha... hi ha de tot. Jo crec que depèn molt de les persones, no? Hi ha dies que segons qui... no?.. qui quadra... que aquell dia li toca el servei es treballa molt en equip. Si una d'aquestes, que és molt primmirada, molt meticulosa i molt tal, li toca una companya que no ho és tant, llavora'ns es treballa més individualment. | 194

MS1- si? En el turno de noche administramos los analgésicos asumiendo los riesgos | 194

MS7- Nunca. Siempre me han hecho caso. Siempre me han atendido y siempre le han puesto algo | 194

RN2- Clar, cadascú té una atenció dif... O sigui, cadascú té unes tasc.... podríem dir aixís i no sé si utilitzo les paraules correctes i menos per -------------- millor... Cadascú té unes tasques diferents,vale? Però la finalitat és la mateixa, això està claríssim. La finalitat del nostre treball, en conjunt, és la mateixa... El que passa que cadascú té, pues això, uns papers diferents a fer, però cap és independent... cap és independent. I, o els sumem tots i... i... estan en comunicació tots: metge, família, malalt, infermera... [...] Hi ha la por a que no comparteixen el dolor... Ai! Bueno, lo del dolor... això, lo que sigui... No és dolenta. Podria ser molt millor. Jo penso que hauria de ser molt més de treball en equip... molt més de treball d'equip, hauria de ser... això... Penso que hauria de tenir molt més clar que ... la línia de treball del malalt. [...].... la... la relació equip estaria més bé si aquest... si hi hagués aquest.... si aquest... si hi hagués aquesta persona lideratge que intentés... intentés això, minimitzar els problemes en lloc de... de que n'hi hagin més, no? I amb els metges també seria millor. Jo penso que... jo penso que és absurd que no fem més..més.. algunes reunions d'intercanvi. | 195

RN1- Sí. Saps què passa? Que aquí com... a veure, hi ha malalt que sí, però també hi ha malalt que està molt poc... Clar, I van i vénen... I se'n van fora de l'Hospital... perquè amb això de les angioplàsties també tenim molts que van i vénen... estan aquí hores i se'n van | 196

MS1- Bueno, jo una de les coses que penso que fem, és que nosaltres tenim una visió global del malalt, no? Llavors pots estar per moltes coses i incidir en coses de... pues en tractaments que portaven en el domicili que s'han suspès temporalment i que els reinicies gràcies a l'observació de les infermeres... de dir 'Escolta, aquest malalt portava tal, per què no ho comencem?' Jo penso que una de les coses que fem és això, que tenim una visió més amplia i més global | 196

AS1- S'ha de revisar molt les gràfiques perquè la gent es deixa les ratlletes de les medicacions. Això, no? Quan s'és establert que a la nit es facin les gràfiques, no?... les ratlles i això, no? Doncs... | 196

AS4- Crec, que amb el que es falla aquí molt, que no és cosa nostra, és que hi ha molt malalt desorientat i molt mal portat... perquè si... tu saps? Bueno, malalt desorientat o psiquiàtric o... Sino hi dones X coses... perquè els hi costa molt pautar, pues jo què sé, sedants o lo que sigui... Clar, és...és una baralla... L'has d'acabar de... de mans, de peus, de torax... I això encara és pitjor... I no hi ha manera que s'entengui que... | 196

AS7- El tens desorientat... a més, al psiquiàtric no li donen la medicació | 196

A6- Et diu 'Puedo traerle Coca Cola?' Dius 'No. Cosas... Coca Colas de estas... nada...No sé qué...' Et diu 'Voy a la màquina y le traigo un zumo... un zumo de esos'.. 'Ah! Guay!' y llavons, allò que entres a | 197

l'habitació i te lo encuentras con una Fanta y tú.. 'Qué hace la Fanta aquí?'... 'Es que como no había zumos, pues le he traído lo más parecido'... I tu dius '¿Cómo?'

MS2- Jo hi ha... la gent... l'infermeria no es planteja que puguem cometre iatrogènia... i jo crec que en cometem... I en cometem en casos molt concrets i us ho puc dir... perquè   197

Que arribes al matí, amb l'esfingo posat, suat el braç, amb comprensió horària, que el tens programat allà,

Uns electrodes que van molt bé, perquè s'enganxen molt bé, però s'han de canviar cada dia perquè sino es fan flictenes al gel... O sea, tu separes aquelles d'això i hi han flictenes a la... a la pell. I després, ja no diguem aquestes brànules que potser s'haurien de canviar més sovint o vigilar, perquè aquí som moltes...

I potser... doncs bueno, una mica de contrició com a professionals ens la podríem fer per millorar... No per dir 'Oh! Que dolent, que malament que treballem'... No... Les claus de 3 pasos són molt bones... molt bones, però s'han de canviar o sinó, és un focus d'infecció, eh? la.. els... els taps aquests que... que punxes directament el ningú els canviem

MS1- a mi m'ha donat el canvi, ha qüestionat una malalta si s'havia de prendre Espironalactona o no... perquè per diagnòstic, per diüresis, per no sé què, no li tocava... I hem cregut que seguramente era un error perquè la malalta del costat portava Espironalactona... Tot i que era una dosis diferent... I hem pensat que era un error de transcripció... de dir 'M'he confós de malalt i ho he posat en un malalt que no tocava'. No ho hem donat, ho hem consultat i ens han dit que no el donguéssim... Vull dir, que... seguramente podria estar informatitzat i l'error seria igual, no?...   197

RN2- Jo crec que pensem... que pensem poc. Crec que alguna vegada actuem amb massa automàticament davant de... de les coses. És igual, per coses simples... [...]sí que és veritat que estem... que consultem pocs llibres i consultem poques...ehhh....[...]. No estem prou formades i no ens autoexigim estar prou formades. Això també té que veure una mica amb el lideratge. Si tu trobes recolzament, tu poder (=potser) t'impliques més, no? En la relació aquesta relació es ...perillosa   197

NS1- A mi de las cosas que me preocupan ahora mismo... y digo ahora este año.. es sobretodo la agilidad al trabajar... en las urgencias. O sea, el decir...Yo abajo tenía bien en mi cabeza donde estaban las cosas. Y cuando corría, corría en una dirección que sabía que estaba allí. Y ahora pierdo mucho tiempo, porque me bloqueo   198

NS4- Si, a veure... no sem... a veure, a vegades no és el resultat... Pobret senyor! Ha sortit bé però si també, aparentment ha estat un èxit. Però tu saps que lo que has fet, ho has fet bé. La sensació és diferent. Sap greu pel malalt però com feina feta vull dir-te que és una sensació de estar... que has fet lo correcte, lo que tenies que fer, encara que a vegades el resultat sigui...   198

MS2- totes les intervencions per conservar allò que no ha estat compromès (per la malaltia), això ho fem tot nosaltres... mobilitzacions dels pacients   198

AS7- jo crec que lo que diu ella... per exemple, ehh... jo què sé... si jo tinc molta feina, jo tinc que fer els meus malalts, arreglar-los el llit o lo que sigui, o fer una cura i jo no puc i jo què sé... i jo envio pues, a la A5 i al A6, si jo els envio a ells, jo m'he de fiar del que facin ells.   198

MS6- No... que sí... que acabes parlant am els pacients.. Vull dir, jo crec... per mi és més accessible... Vull dir que no tinc cap problema.. en la comunicación amb les pacients.. sempre acabes aconseguint informació del pacient i acabant-te comunicant bé, no?   198

MS4- No... però vull dir... és així, no? Necessita parlar d'una altra cosa para no pensar 'Estoy aquí así... Me está viendo esta mujer...', saps? '...que... que no conozco de nada'. I hi ha d'altres que sí, que necessiten pues explicar-te la seva vida, les seves preocupacions...   198

MS5- el paciente limita hasta donde puedes llegar en la comunicación   198

MS1- I amb aquests més seriosos o més aspres... just ara ho comentàvem amb... eh?, en el canvi... Que en funció de la relació que tu tens amb el malalt, si és més fluida i és bona i és cordial, els malalts acaben anant millor també, no?   199

RN2- Vull dir,.prenen aquesta confiança d'explicar-te. Jo crec que a vegades.... i sento posar-me aquest... aquest... Però a vegades parlant amb el malalt pots saber molt.... Ara... ara els metges... es diagnostica molt per proves, no? I penso que s'han oblidat de tocar, escoltar, olorar i tot això. I penso que molts cops ens perdem molta informació. I parlant amb el malalt a vegades, ostres!..et dóna el quid de què va passar o quan va passar o què va passar. I... per mi, ja et dic... és fonamental cara a ell. Se sent segur, se sent en... li dones la confiança. Et pot explicar moltes coses... Que a vegades se sent molt desinformat... Està molt desinformat i a més, el se... Jo intento ehhh.... casi di'ls-hi que exigeixin ser informats a més comunicació més seguretat   199

RN1- ...extrema, no? No amb tothom, eh? Però jo crec que hi ha persones que és una confiança extrema, de la infermera al metge i del metge a la infermera... Extrema, vull dir... 'Si aquesta infermera em diu això.. és això. S'ha de buscar per on ve, però si la infermera em diu que en un moment determinat aquest malalt ha fet això, és que m'ho crec encara que no ho hagi vist'   199

En general, jo crec que són bones, sobretot amb els habituals. Ara tenim més gent que no fa tant de temps que està i bueno... gent una mica més especial i llavors hi ha...bueno, una relació de... bé... cordial i d'anar fent.

AS7- ...encara que hi hagi feina es farà d'una certa manera o... o anirem de cul perquè serà caòtic... és tot alhora, tot ja... tot...depenent del metge de guàrdia 199

MS9- Ho trobo a faltar que... que et vinguin i estiguis discutint realment, que t'escoltin activament lo que tu tens a dir. Una cosa és que allavors desconfïin o no de lo que faig o no faig i que em vigilin lo que he posat i lo que he deixat de posar, però que en el tracte humà de... de... de si jo tinc una preocupació del meu pacient, li vagi a dir... no et miri així i... saps? 200

MS9- La comunicació també amb els Centres de Primària que no... no sé si els... tots els... els polipatològics crònics, si tingués... si es passés la història dels Centres de Primària als hospitals... si hi hagués més comunicació podríem també... tota la medicació que ja portaven... quan passen el procés agut, pues tornar-li a posar tot, lo mateix que portaven 200

RN2- Fa un moment no volia res i ara té dolor i té de tot, no? És perque la família ho necessita i... i també... també... I clar, deu veure a veure què pot fer per ell i necessita ------------ no es quedi res que el pobre malalt no... no... allà acovardit... no ho expressi, no? Jo crec que una molt important, molt important... perquè no té una altra via, sembla... Que l'hauria de tenir, que és la sensibilitat d'explicar-li al metge el què... ehh.... És vehiculitzar el que sent... vehiculitzar el que sent... Llavors, en el moment que ho expressa, pues un altre... un altre p...p... punt molt important és vehiculitzar la solució. I és en aquest cas... és... és... és estar... pues és... és... s'ha d'informar, pues informar... si... o buscar que l'informin. Si la... lo que t'expressa és patiment, intentar calmar o intentar buscar les eines per disminuir aquest patiment. Vull dir, és respondre molt a lo que el malalt... Jo crec que el paper molt important que fem és això, és vehiculitzar... 200

NS3- Sí, però, per exemple, Quina, van canviar els el desfibrilador i no... saps? I ningú sabia com anava... i no sabíem com anava el marcapàs extern... I llavors no sabíem res 201

NS6- El torn de nit te això a vegades, d'aprenentatges i coses noves manca d'informació és preocupant 201

NS4- lo otro es absurdo porque si yo le doy los más difíciles me voy a tener que también meter a hacer los más difíciles con los míos. Es más fácil darle lo más fácil, que podrá ir tirando y tu podrás dedicarte bien a lo otro. Ara, eso no quiere decir como yo, una vez no hace mucho, que tuvimos una chica suplente tal, tal... Y un paciente que realmente era fácil, se acabó intubando, porque estamos en una Unidad que es... puede pasar 201

RN1- Bueno, la.. la presentes... Arriba... Allavorens bueno, lo que sí fa l'infermera.... Normalment li adjudiques algú que... que la tutoritzi una miqueta, no? Que faci una mica de... I allavores, a vegades, pues es fa un replantejament... Això sí que es fa sempre, el replantejament de pacients per veure quins pacients se li deixen a ella 201

AS3- Jo pregunto tot. Jo qualsevol... sí... qualsevol dubte que tinc o que no sé molt be com... això, pregunto i tinc la sort que m'ho saben contestar 201

AS7- Hi ha hagut una dada.. que hem tingut molta gent nova de cop i et sents una mica malament perquè no pots estar tu per ells a vegades com hauries d'estar... i jo què sé... Qui està de guardia, per exemple, vol 'ja' i vol que ho facis tu 201

AS2-Dius.. Vale, és veritat, aquesta persona no porta el mateix que porto jo, però no és això... no pots... com que no el conec, passo. No... no té sentit. O.. o tu estàs fent alguna cosa dels teus malalts, ja tens prou amb els teus malalts i et ve i... i 'Pues.. pues ara te'n vas a mirar a aquell de l'altra punta a veure si l'altre ho ha fet bé'.. A veure, no... 202

MS1- Bueno, però aprofitant que de moment encara hi ets... Doncs, jo penso que... A veure... és cert, no?..lo que diuen de la... de la inestabilitat de plantilles i que tenim molta gent jove... Però jo aquí hi afegiria un... un condicionant... que és un problema d'actituds generacionals... Sí... Bueno, no sé tu... Jo és que estic molt reivindicativa últimament... Jo crec que ho he sigut sempre però ara torno a estar-ho bastant... Hi ha actituds de... de la gent d'ara... dels joves d'ara..., i això ho havíem parlat ja amb la Fina Muñoz fa temps, no?... que no tenen l'afany d'aprendre com teníem abans, fa anys endarrera... Vénen tranquils. se'ls hi enfot si estan a Semicrítics, a la UCI... si hi ha una TV o una no TV...és... cap problema... anem amb la calma, anem fent... Jo he flipat. Jo he vist gent recent acabada la carrera, tothom nou... Jo amb el meu conseqüent estrés perquè jo... Sí, jo fa molts anys que sóc infermera però jo ara estic amb una dinàmica diferent...Que al principi jo m'ho he passat molt malament. Jo el primer mes m'he trobat inclús físicament malament... i ella ho sap. He tingut uns mals d'estómac brutals. He plorat moltíssim en aquí... com feia anys que no plorava treballant... I tu els veus jugant a l'ordinador a les 7 i quart del de matí... que dius 'Però què cony estan fent aquí? A què estem jugant?', no? I dius 'Tia! Que acabes d'acabar la carrera... Que t'han dit que tens un malalt que està xungo... Què fas aquí, no?'... Vull dir, que jo crec que també hi afegiria una mica... la qüestió... No tothom, eh? No tothom... Però hi ha un problema d'actituds, no?... Bueno, no? És igual si són pomes que si són patates... 202

APPENDIX B:

Nursing staff measures and nurse workforce

Appendix A: Nursing staff Measures*	
Variable	**Definition**
Nurse to patient ratios	Number of patients cared for by one nurse, specified by job category
RN to patient ratio	Number of patients cared for by one RN
LPN to patient ratio	Number of patients cared for by one LPN
UAP to patient ratio	Number of patients cared for by one UAP
Nurse hours per patient day	Total number of productive hours worked by all nursing staff with direct care responsibilities per patient day. A patient day is the number of days any one patient stays in the hospital
RN hours per patient day	Number of productive hours worked by RN with direct care responsibilities per patient day
LPN hours per patient day	Number of productive hours worked by LPN with direct care responsibilities per patient day
UAP hours per patient day	Number of productive hours worked by UAP with direct care responsibilities per patient day
RN/LPN/UAP FTEs per patient day	Number of RN/LPN/UAP FTEs per patient day. This ratio has been calculated in several different ways: number of patients cared for by one nurse per shift; FTE/1,000 patient-days; nurse/patient day or FTE/occupied bed
FTE (Full-time Equivalent)	Work that is about eight hours a day, five days a week and forty-eight weeks of the year with four weeks paid leave. FTEs can be composed of multiple part-time or one full-time individual
Skill mix	Proportion of productive (i.e., direct patient care related) hours worked by each skill mix category (RN, LPN/VN, UAP). Skill mix refers to the type, number, and ratio of staff necessary to perform the established work
Staff mix	The combination and number of regulated and unregulated persons providing direct and indirect nursing care to clients in all settings where regulated nursing groups practice (CAN, 2003).

*Adapted from AHRQ Publication No. 07-E005

APPENDIX C:

Ethics Approval

**HOSPITAL DE LA
SANTA CREU I
SANT PAU**
UNIVERSITAT AUTÒNOMA DE BARCELONA

Sant Antoni Ma Claret, 167 - 08025 Barcelona
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e-mail: santpau@santpau.cat
www.santpau.cat

Doña **Milagros Alonso Martínez**, Secretaria del Comité Ético de Investigación Clínica del Hospital de la Santa Cruz y San Pablo,

CERTIFICA:

Que el proyecto de investigación titulado: "**Cuidados de enfermería y resultados de los pacientes**" presentado por la Sra. **M. Subirana** de Escuela de Enfermería, ha sido revisado por este Comité en su reunión de fecha 10.03.2009, y considera que se ajusta a las normas establecidas.

Y para que así conste, firma el presente en Barcelona, a 11 de Marzo de 2009.

FUNDACIÓ DE GESTIÓ SANITARIA DE
L'HOSPITAL DE LA SANTA CREU I SANT PAU
COMITÉ ÈTIC D'INVESTIGACIÓ CLÍNICA

Dra. Milagros Alonso Martínez

![Escola Universitària d'Infermeria]

PATIENT INFORMATION SHEET

Study title: 'Nursing care and patient outcomes'
Main researcher: Mireia Subirana

We invite you to participate in a research study on nursing care and its relationship to patient outcomes.

Before taking a decision on their participation is important to understand why research is conducted and what it means. Please read the following information carefully.

Why was the study done?

Nursing care has a clear impact on the wellbeing and patients evolution. However, there are few studies that establish this relationship, so that the results of this study will be of great value to know the contribution of nurses in the quality and safety of care and patients outcomes.

What is the purpose of the study?

We want to know the experiences of patients regarding nursing care to improve and ensure safe and quality care. The study included 30 patients who as you have been admitted in a high dependency unit (HDU).

What will happen if I decide to participate?

If you agree to participate in the study you will be asked to sign an informed consent agreeing to participate. You will be interviewed for about an hour on your experience as a patient in the HDU. The interview will be conducted in the HDU room and will be recorded. The anonymity of data from the interview will be maintained. There are no known risks associated with this study.

Is it compulsory to participate?

No. Your participation in the study is completely voluntary and may be revoked at any time you want. If you decide to end their participation in this study, you still will be treated as usual.

What happens to the data you provide?

The confidentiality of all study data will maintain. You name will be not mentioned in any report. However, the study is expected to be widely disseminated in both oral and written. In all cases the data will be anonymous.

Can I get more information?

If is required, you can contact with Mireia Subirana, Nursing School Hospital de la Santa Creu i Sant Pau (93 291 92 17). Universitat Autònoma de Barcelona.

Thank you for taking the time to read this information sheet. To participate in the study, please fill out the informed consent form.

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d'Infermeria

PATIENT
INFORMED CONSENT

Study title: 'Nursing care and patient outcomes'

Main researcher: Mireia Subirana

I agree to participate in the study described in the information sheet held in the School of Nursing of the Hospital de la Santa Creu i Sant Pau, Barcelona

My signature at the bottom shows that:	**Tick**
▪ I have read and understood the information sheet that has been provided to me and I had the opportunity to ask questions to get more information or clarify my doubts.	
▪ I understand that my participation will be confidential, not mention to my name in any report will be done and that data will be stored securely.	
▪ I understand that my participation in the study is completely voluntary, I can withdraw at any time I want. If I decide to end my participation in this study, I will continue being treated as usual.	
▪ I understand the information that the study raises will be used in publications or presentations of nursing.	

Patient   name:_____

_____ _____
Patient Signature   Date

Witness Name:_____

_____ _____
Witness signature   Date

Researcher name:_____

_____ _____
Researcher signature   Date

Data Confidentiality Commitment

Escola Universitària
d'Infermeria

DATA
CONFIDENTIALITY
COMMITMENT

Study title: 'Nursing care and patient outcomes'

Main researcher: Mireia Subirana

La Sra._____con DNI nº_____

MANIFEST

That having agreed to carry out the transcription of audio files or translating into English transcripts of the interviews (between 30 and 32) and discussion groups (4 groups) of the above-mentioned analysis, undertakes to meet the following points:

FIRST .- To keep the strictest confidence about the data and documentation relating to the study, not to disclose or publish or make them available to third parties, other direct or indirect, or even for preservation.

SECOND .- A not copy or save a copy of such data or documents, in whole or in part, whatever the medium in which they are, except for those copies required for the proper performance of the functions, and return all documentation the study once it has completed its work.

THIRD .- To take all the relevant security measures to ensure confidentiality of information containing personal data and avoid its alteration, loss, unauthorized access or processing.

FOURTH .- A few respond in damages resulting from such failure of this undertaking of confidentiality.

In Barcelona, on November 16, 2009

_____

Signature

FOR PATIENT'S INTERVIEW:

ALL THE TIME USEFUL PROMPTS

− **Can you tell me more?** Tell me more about that (if they mention the nurses) if not:

− **Why you say that? (**for example after a patient saying nursing know what are they doing)

− **How does it make you feel?** (related with when nurses talk to each other while is caring patient, hygienic procedure).

− What worked well for you?; What worked less well? (If they raise negatives ask them what would have made a difference?)

OPENING QUESTIONS

− Tell me what happened when you arrive at the HDU. What things do you like, what things don't you like?

− Tell me about your experience in the HDU. What things do you like, what things don't you like?

− How do you feel here?

− Which professionals can you remember?

− What about the nursing staff, what things you do like, what things don't you like about what they doing?

SAFETY QUESTIONS

− When the nurse came in to give a medication, changing catheter, given food, how do you feel?

− Is the same feeling with all the nurse? There are some nurses which you feel more comfortable or more safety? What this nurse do differently?... why you say this…

OUTCOMES QUESTIONS

− Did the nurse to tell her the changes in the way you feel?

− Did the nurse tell you what you do if you feel pain (pain changes,)?

− Do you feel that you pain has been well control during you time here ()

− Do you feel that you illness is becoming well control during you time here ()

− How do you feel you are know in relation when you came and when you came to the HDU?

− I'm sorry…. I'm please to… Do you want to say a bit more?

− Are there things that the nurse have done that helps to feel better?

− If don't feel better: Are there things that the nurse could have done that helps to feel better?

− Can you tell more about that? Why do say this..?

− What else you think you need from the nurse to help you?

− How important nurse are in relation with you safety? why

CARE

− Can you tell me what was important to you in relation to nursing care that you received? (respecting, trustworthiness, kindness)

− How do you feel about the care provided by the nurses?

INTERPERSONAL RELATION

− Tell me about how you get on with the nurses

− Can you easily to talk to?, are they friendly?, are they understanding?, do they ask you how you feel?, do they listen to you?, are they professional?

QUALITY OF CARE / SATISFACION

− Looking overall at the time in HDU, how do you rate you level of satisfaction with nursing care provided by the nurses in the HDU if 10 means very satisfied and 0 means very dissatisfied.

− Is it something else that you would like to comment about you experience of the care provided by the nurses?

Thank you very much, for you time and help.

FOR NURSES' FOCUS GROUPS AND INTERVIEWS:

TOPICS ARE AS FOLLOWS

- Unfinished or incomplete care
- Use of standard technique
- Prudent monitoring of invasive medical devices
- Systematic skin inspection, cleaning and positioning
- Adherence to care pathways/protocols
- Nurse role: Autonomy
- Coordination of care
- Nurse role in patient outcomes

OPENING QUESTIONS

- What do you like of you healthcare practice in HDU? What do you dislike? ... ...aspects that you would keep and aspects that you would change ...
- How would you define your practice: intuitive, reflective, evidence-based?
- What are you worried about your practice (model of care, nursing leadership, team work ...)?
- Do you have enough time to develop your practice?

CARE

- How do you feel about the care that your provide? (Unit organisation)
- How can you define that care? (Knowledge, reflection, clinical judgement)
- Does nursing care influence patient health status?
- Are there specific aspects that my influence more than others?
- What is important for you when caring a patient?
- Staffing adequacy
- Clinical judgment
- Unfinished or incomplete care
- EBP (use of standard technique, prudent monitoring of invasive medical devices, systematic skin inspection, leaning and positioning, adherence to care pathways/protocols)
- Nurse autonomy and accountability
- Control over nursing practice environment (coordination of care, good teamwork, working with other clinically competent nurses)
- Is it important experience in nursing care? And your colleagues experience in your care, how it affects your job?
- Is it important training in nursing care? And your colleagues training in your care, how it affects your job?
- How are the relationships with patients? It is easy to communicate? Have you experienced situations where communication was difficult? How do you act?
- How are the relationships with other professionals? It is easy to communicate? Have you experienced situations where communication was difficult? How do you act?

OUTCOMES

- What aspects of nursing care influence patient outcomes?
- What patient outcome can be attributing to nursing care?
- In addition to the aspects of care, what do you think most influenced patient outcomes?
- What do you think my influence patient recovery?
- How important are nursing interventions in patient recovery?
- If you have to set a percentage, what would be?
- Can you identify nursing interventions that influence patient recovery?

SAFETY

- What aspects of nursing care influence patient safety?
- What else you could do or would like to do to improve the patient safety?
- Is it the same in all patients?
- As a team, how do you feel like at the end of your shift, happy, unhappy ...
- Exercise to review a relevant case to each shift
- Is it something else that you would like to comment?