

**Patients' and Nurses' Perspectives on Patients'
Experience for Coronary Care Unit Stressors
Using a Mixed Method Approach**

A thesis submitted for the degree of Doctor of Philosophy

BY

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DEDICATION

This research is dedicated to the souls of my father and my grand mother. Also to my precious mother and sisters for their continual love and support which helped me all along my PhD journey.

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ABSTRACT

Background: Getting admitted to CCU is viewed as a stressful event by patients. However, numerous studies have indicated that nurses do not always accurately perceive the stressors of their clients. Therefore, it is important for nurses to know what seems most stressful from the patients' perspective so that appropriate nursing measures can be directed towards minimizing such stressors.

Objectives: The purpose of this study was to explore the perception of CCU stressors experienced by patients from both patients and nurses perspective and to compare between them, identify the effect of socio-demographic characteristics of participant's on the level of stress perception and to what extent clinical guidelines fulfil CCU needs.

Methodology: A mixed method approach (qualitative and quantitative) was applied. Purposive random sampling was used to recruit data. Ethical approval was obtained prior to data collection. Data was collected from three CCUs within the West and Northwest NHS Trusts. Participants who met the inclusion criteria were interviewed and asked to rank the Environmental Stressor Questionnaire (ESQ). Qualitative data was analyzed using Gorgi's method of analysis. A quantitative data was analyzed using the SPSS software version 15.

Results: There was some consistency in the data where patients and nurses provided same ranking for CCU stressors. Consistently nurses ranked physiological stressors higher than psychological stressors. Patients showed consistency in the findings between what they ranked in the ESQ and their narratives more than their counterparts. Perception of stress was affected by participant's socio-demographic characteristics. A key finding is that the current guidelines do not serve patients and nurses needs.

Conclusions: Nurses should be well equipped with knowledge and experience to overcome stressful situations. Educational programs should be made available for nurses to improve stress management. Nurses should assess patient's needs by applying effectively communication skills.

CHAPTER 1: INTRODUCTION

1.1. Introduction

The Coronary Care Unit (CCU) is a subset of intensive care area dedicated to the care of acute cardiac patients that require continuous monitoring and treatment for life saving (Marosti & Dantas, 2006). Research has shown that CCU is a stress-generating area in which patient may experience both physical and psychological discomfort and stressor (Russel, 1999; Leur et al., 2004, Biancofiore et al., 2005, Pang et al., 2008). In general CCU differs from other hospital settings because of the complexity of patient health problems, the treatment modalities used and the environment. Innovation in medical care technology, the complex structure of the CCU environment and complex patient care needs are also responsible for the stresses that often originate in the CCU environment (Kacmaz, 2002; Yava, et al., 2010).

For nurses the working environment within CCU is thought to be stressful due to presence of machinery required for monitoring purposes also the constant use of invasive and non invasive procedures for the purpose of measuring, monitoring and regulating physiological functions (Alasad & Ahmed, 2005). There is also the constant expectation of emergencies, interruption of routine activities by "medical urgencies" and lack of privacy (as men and women are placed in the same environment) (Marosti & Dantas, 2006).

Coronary care unit environmental stressors may be negatively associated with recovery; thus, it is important that nurses manage such stressors in caring for their patients. In addition, these stressors may elicit the stress response and trigger

complications in CCU patients' condition (Biancofiore et al., 2005; Cochran & Ganong, 1989). Delirium, for example, is accepted as an important risk factor for mortality, also longer CCU and hospital stays, are associated with numerous other complications like ICU/CCU psychosis, nightmares or vivid dreams and suicidal attempts (Lat et al, 2009).

It has been suspected for a long time that acute and chronic mental stress states constitute risk factors for higher morbidity and mortality levels due to cardiovascular diseases (Marosti & Dantas, 2006). Care delivery provided to cardiac patients hospitalized in coronary units is aimed at detecting possible complications derived from the clinical situation, re-establishing hemodynamic and enhancing the patients' recovery. Understanding how patients feel can help nurses and their team to define stressors within the unit, thus stimulating the construction of protocols that aim to improve the unit and make the patient's stay more pleasant (Novaes et al., 1999).

The importance of assessing stress during hospitalization, with a focus on patients with heart disease, is based on all of the stress related physiological alterations, mainly in the cardiovascular system. Thus, eliminating sources of stress could mean guaranteeing a better recovery for cardiac patients hospitalized in coronary care units (Novaes et al., 1999; Leur et al., 2004, Marosti & Dantas, 2006).

Coronary care unit nurses are responsible for identifying stressors in the CCU environment. Coronary care unit nurses must also monitor the patient's response to stress and the influence of stress on recovery; they must also help patients find appropriate ways to overcome stress (Hweidi, 2007; So & Chan, 2004). It is necessary for nurses to know how their patients have perceived the stressors and to

try to minimize these stressors by manipulating the environment (Cochran & Ganong, 1989).

Understanding the stress perceptions of both patients and nurses in the CCU and the effect of their socio-demographic characteristics could be useful in considering ways to reduce stress (Cochran & Ganong, 1989; Hweidi, 2005). There is some research related to nurses' perceptions of ICU patients experience of stressors. These studies indicated that nurses perceived 'pain', 'loss of self control' and 'tubes in the mouth and nose' as the most important stressors for patients in ICUs. Nurses perceived that patients had more stress compared to patients' perception of stress (Cochran & Ganong, 1989; Cornock, 1998; Novaes et al., 1999; Pang & Suen, 2009).

The researcher within this research hoped to investigate whether the current CCU guidelines adequately cover the physical and psychological needs of CCU patients. This was undertaken by experiencing individual patients stressors as recognized in the CCU guidelines without changing the protocol. This research results, may provide a stimulus for new research that could change the CCU protocol.

It was, therefore, important and beneficial not only for patients but for the CCU staff to describe their experiences in order to provide feedback to nurses and to improve the quality of care provided to patients (Justice, 2000; Hwiedi, 2005).

1.2. What is known and what will be added

A- What is already known about the topic?

- The critical care unit including the coronary care unit environment has been regarded as a leading stressor because of the complex nature of patients' health problems that require an extensive use of very sophisticated technology.
- Advances in health care technology produced new stressors in the coronary care settings, which call proficient and skilled nurses dealing with these stressors as they affected patients' recovery.
- Various stressors have been identified in critical care units as principle factors which contribute to physical and psychological stress among critically ill patients.

B- What this research adds?

- It seems that stressors in CCU are a universal phenomenon and socio demographics of patients have impact on their perception.
- Physiological stressors are the prime concern of coronary care patients and nurses in coronary care units rather than psychological stressors.
- Treatment of pain is of prime importance since CCU is less likely to respond to psychotherapeutic interventions. Thus, nurses in CCU must emphasize the importance of adopting practical and effective pain, sleep, noise control assessment and relief measures and effective communication skills.
- Nurses in coronary care unit need to encourage and empower patients to regain some control over the situation around them and being involved in their care plan to enhance patients' autonomy.

1.3. Key words

Stress, Stressors, Coronary Care Unit, critical care environment, patient's perception, nurse's perception, intensive care unit, coronary heart disease.

1.4. Electronic search

Search for the current issues related to stress and stressors using the above key words with the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library), MEDLINE (OVID, 1950 to present), PubMed (1960 to present), and CINAHL (1960 to present).

1.5. Problem Statement

What is the perception of patients' and nurses' regarding stressors experienced by patients in CCU in three assigned hospitals and to what extent are stressors covered by the main clinical guidelines?

1.6. Objectives

In general the purpose of any nursing research is to answer questions or solve problems of relevance to the nursing profession (Polit & Beck, 2008, p.19). The purpose of this study is **First:** to explore the perspectives of patients' and nurses' regarding stressors experienced by patient in CCU. **Second:** to compare patients' experience of being an in-patient in CCU. **Third:** to compare nurses' perspectives of patient experience in CCU. **Fourth:** to identify the effect of patient and nurse selected socio-demographic characteristics on level of perceptions. **Fifth:** results of the study will allow the researcher to evaluate to what extent guidelines cover the physiological and psychological needs and stressors of CCU patients as indicated.

1.7. Significance of the Study

The coronary care unit can be viewed as a subset of intensive therapy units. In general, the focus is on physical care despite the holistic approach emphasized in modern nursing. Nurses are in close and intimate contact with patients and they are in the best position to provide support to them (Wong & Arthur, 2000). Ashworth (cited in Bridge & Clark, 1981) claimed "that it was part of nurse's work to make the critical unit a place where the patient feels that everyone is working with him rather than on him; because of advances in technology" (p.80). However, CCU tends to emphasize technological skills which may decrease direct Nurse-patient contact and increase patient stress (Wong & Arthur, 2000).

Florence Nightingale was the first recorded practitioner in a western health care system who considered environmental elements and how to manipulate it (Hewitt, 2002). In 1854, Nightingale stated that "unnecessary noise or noise creates an expectation in the mind is that which hurts a patient" (Nightingale, 1854, p.56). Nightingale, proposed that the environment plays a vital role in the nurse-patient relationship, where the nurse is in control of these elements in order to protect the patient from physical and psychological harm (Hewitt, 2002). Environmental stressors negatively affect the health status of patients and impede the recovery process (Angus & Carlet, 2003). The impact of this stressful environment may impact on the recovery of patients from CCU. Recognized concerns include high rates of psychological problems such as ICU psychosis (Dyson, 1999; Russel, 1999), or recalling experience of vivid dreams, hallucinations or delusions. These may be persecutory in nature and are sometimes very frightening (Roberts' et al., 2006).

Patients recall, not only the negative experiences, but also the positive ones. This is associated with the security provided by the constant presence of the nurse, the confidence which health care professionals inspire because of their competence, human communication and the information they provide (Turner et al., 1990; Russel, 1999; Stein-Parbury & Mckinley, 2000). The nurse plays an important role in detecting and assessing the patient's discomfort on a regular basis; that is why it is important for nurses to apply clinical guidelines to the care of cardiac patients in order to reduce their suffering (Leur, 2004; Gelinias, 2007).

1.8. Nursing Implication

After reviewing a number of research studies in ICU and CCU (Russel, 1999; Wong & Arthur, 2000; Adamson et al., 2004; So & Chan, 2004; Hweidi, 2005) it become apparent that this study would provide the following: **First:** evidence to stimulate nurses to think and reflect on their current practice (Wong & Arthur, 2000; Biancofiore, 2005). **Second:** a knowledge base for the refinement of nursing practice in critical care and transition care settings and raise awareness of patient/nurse communication needs (Russel, 1999; So & Chan, 2004; Hweidi, 2005). **Third:** allow better integration of patient care services and continued support which is required for survivors of critical conditions (Adamson et al., 2004).

1.9. Research Questions

The research is developed in an attempt to answer the following general questions.

First: what is the patients' perception of stressors in CCU Setting (patient recall)?

Second: What is the nurse perspective of patients' experience in CCU Setting?

Third: What is the effect of sampling characteristics on the patients' level of perception to CCU stressors? **Fourth:** What is the effect of nurses' sampling

characteristics on their perspectives for patient experience of CCU stressors? **Fifth:**

To what extent available clinical guidelines encompasses patients needs?

1.10. Research Hypotheses

- There is an effect of patients' gender on the perception of CCU stressors.
- There is an effect of patient's ethnicity on the perception of CCU stressors.
- There is an effect of patient's level of education on the level of perception to stressors.
- There is an effect of patient's method of admission to CCU of the level of perception to CCU stressors.
- There is an effect of patient's previous admission to CCU on the level of perception to CCU stressors.
- There is an effect of nurse's experience on their perspectives of patient's experience of CCU stressors.
- There is an effect of nurse's educational level on their perspectives for patients' experience of CCU stressors.
- There are differences between patient's perception to CCU stressors and nurses' perceptions of patients' experience of CCU stressors.
- The main CCU guidelines not fulfilling patients' needs.

1.11. Conclusion

This chapter laid the foundation of the thesis by introducing the research problem, research aim and objectives. A simple representation of the entire research was highlighted within the abstract part. This chapter also represents research significance and nursing implications of the study. The next chapter will examine the relevant literature to this research problem.

CHAPTER 2: REVIEW OF THE LITERATURE

2.1. Introduction

This chapter provides an overview of the current study by presenting the available literature related to the topic in an attempt to assess what is already known within the context of stress. The first section of this chapter includes a definition of terms. The second section will provide a literature review. Finally the third section will provide an overview of the supportive evidence for the environmental stress model which is used to give a framework to and direction for a study of the stress phenomena in coronary care units.

2.2. Definition of Terms:

To reduce the possibility of confusion regarding terminologies like “intensive care unit” (ICU), “critical care unit” (CCU), “coronary care unit” (CCU), “stress” and “stressors”; the researcher will define those units and indentify the relationship between them before going further in the research study.

2.2.1. Intensive Care Unit

An intensive care unit (ICU), critical care unit (CCU), intensive therapy unit or intensive treatment unit (ITU) is a specialized hospital department used in many countries where hospitals provide intensive care medicine. Many hospitals

worldwide also have designated intensive care areas for certain specialties of medicine, as dictated by the needs and available resources of each hospital. The naming of these units is not rigidly standardised (Julian, 2001). Common equipment in an ICU includes a mechanical ventilator to assist breathing through an endotracheal tube or a tracheotomy opening; cardiac monitors including telemetry external pacemakers, defibrillators, dialysis equipment for renal problems, equipment for the constant monitoring of bodily functions, a web of intravenous lines, feeding tubes, nasogastric tubes, suction pumps, drains and catheters and a wide array of drugs to induce sedation, reduce pain, and prevent secondary infections (Mehta & Khan, 2002).

Medical literature suggests that there is a relationship between ICU volume (staff, patients and equipments) and quality of care for mechanically ventilated patients. After adjustment for severity of illness, demographic variables, and characteristics of the ICUs (including staffing by intensivists), higher ICU volume was significantly associated with lower ICU and hospital mortality rates (Mehta & Khan, 2002).

Medical staff on ICUs typically includes intensivists with training in internal medicine, surgery, anaesthesia, or emergency medicine. Many Nurse Practitioners and Physician Assistants with specialized training are also now members of the staff and provide continuity of care for patients. Staff typically includes, in addition specially trained critical care Registered Nurses, Registered Respiratory Therapists, Nutritionists, Physiotherapists, health care assistants, etc.

There are many specialised types of ICUs such as coronary care units (CCUs), neurological intensive care units, surgical intensive care units, etc. (Table 2.1).

2.1. Table: Specialized types of ICUs include:

<ul style="list-style-type: none"> • Neonatal intensive care unit (NICU) • Special Care Nursery (SCN) • Paediatric Intensive Care Unit (PICU) • Psychiatric Intensive Care Unit (PICU) • <u>Coronary Care Unit (CCU)</u> for heart disease • Cardiac Surgery Intensive Care Unit (CSICU) • Cardiovascular Intensive Care Unit (CVICU) • Mobile Intensive Care Unit (MICU) • Medical Surgical Intensive Care Unit (MSICU) • Medical-Surgical Critical Care Intensive Care Unit (MSCC) • Surgical Intensive Care Unit (SICU) 	<ul style="list-style-type: none"> • Overnight Intensive Recovery (OIR) • Neuroscience Critical Care Unit (NCCU) • Neurological Intensive Care Unit (NICU) • Neuro Intensive Care Unit (NICU) • Burn Wounds Intensive Care Unit (BWICU) • Trauma Intensive care Unit (TICU) • Shock Trauma Intensive care Unit (STICU) • Trauma-Neuro Critical Care Intensive Care Unit (TNCC) • Respiratory Intensive Care Unit (RICU) • Geriatrics Intensive Care Unit (GICU)
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2.2.2. Stress and Stressors

Stressors are defined as stimuli that precede or precipitate change, and are classified as “internal” or “external” (Marosti & Dantas, 2006). Stress has become an ingrained part of everyday vocabulary and daily existence; it is difficult to believe that our current use of the term originated little more than 50 years ago when the word was essentially “coined” by Hans Selye (1950). It is a controversial term broadly understood to be defined by: the result of an imbalance between demands and resources (Iversen et al., 2009), and as something that occurs when pressure exceeds ones perceived ability to cope (Lazarus & Folkman, 1984). Responses to stress are influenced by the intensity, duration and environment of the stress, as well as by the number of stressors present at a specific moment (Potter et al., 1999).

Stress is a major aspect of human life; it affects almost every aspect of functioning including health and wellbeing (Cruess et al., 2004). There is strong evidence to suggest that stressful conditions are involved in the development and progress of many chronic diseases (Kubzansky & Kawachi, 2000; Irwin, 2002; Kiecolt-Glaser et al., 2002) as well as in the adjustment to chronic illnesses (Luecken & Compas, 2002; Cruess et al., 2004). However, to our knowledge, there is no research concerning the particular association between general stress, resulting from the life context, and the ways a patient experiences medical illness.

Stress is usually defined from a 'demand-perception response' perspective (Bartlett, 1998). Lazarus and Folkman (1984) integrated this view into a cognitive theory of stress, that has become the most widely applied theory in the study of occupational stress and stress management (Lehrer & Woolfolk 1993; Rick & Perrewe 1995). The basic concept of the cognitive theory of stress relates both to an individual's perception of the demands being made on them, and to their perception of their capability to meet those demands. A mismatch will mean that an individual's stress threshold is exceeded, triggering a stress response (Clancy & McVicar, 2002).

An individual's stress threshold, sometimes referred to as stress 'hardiness', is likely to be dependent upon their characteristics, experiences and coping mechanisms, and also on the circumstances under which demands are being made. A single event, therefore, may not necessarily constitute a source of stress (i.e. be a 'stressor') for a particular individual at all times, and may have a variable impact depending upon the extent of the mismatch (Lees & Ellis 1990).

Assessment is further complicated because the term ‘stress’ is often used too simplistically. Negative connotations are usually ascribed to the term, yet some stress responses are of positive benefit (Bartlett, 1998). ‘Eustress’ is a term commonly applied to these more positive responses, whilst the term ‘distress’ appropriately describes more negative aspects. ‘Stress’, therefore, should be viewed as a continuum along which an individual may pass from feelings of eustress to those of mild/moderate distress, to those of severe distress.

2.2.3. Clinical guidelines

Clinical practice guidelines can be described as “systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances” (Field & Lohr, 1990, p. 38). Where possible, these guidelines are based on systematic reviews of the evidence from large, well-conducted studies (Raine et al., 2005). These studies include not only rigorous, randomised controlled trials (RCTs e.g. efficacy trials), but also studies that attempt to replicate these findings in routine clinical settings (e.g. effectiveness trials). In reality, however, there are often areas where sufficient research evidence does not exist. In these circumstances, it is common to consider alternative forms of evidence with recommendations made largely on the basis of consensus by an expert group overseeing the process (Sniderman & Furberg, 2009). It also needs to be acknowledged that, even where a high level of evidence does exist, interpretation of that evidence is still required to translate a statement about the findings to a statement of recommended action. As described by Raine et al (2005), this is a shift between what “is” (the evidence) to what “ought to occur” (the clinical recommendation). Clinical guidelines are one component of evidence-based clinical

decision-making that takes into account patients' preferences and values, clinicians' values and experience, and the available resources.

Currently, there is no uniform definition of what clinical guidelines are. One definition refers to "guidelines" as a term covering: (1) rules or instructions given by an official organisation, informing practitioners how to do something; or (2) material given to help with the making of decision or forming an opinion (Hornby, 2000). Guidelines in clinical medicine are the "systematically developed statements to assist both practitioner and patient decisions in specific circumstances" (Eccles & Mason, 2001) or "systematically developed statements that aim to help physicians and patients reach the best health care decisions" (Field & Lohr, 1990). Hence, the major aim in incorporating guidelines into practice is to improve the quality of clinical care and to implement scientifically supported evidence in real-life settings.

Medical guidelines originated in the early 1980s (Andrews & Redmond, 2004). Initially, the idea behind their implementation was to raise the cost-effectiveness of medical treatments. The extent to which cost-effectiveness can ever be considered in a set of guidelines is obviously limited. Ultimately, guidelines can be judged to be successful when they are: (a) accepted (even "owned") by the broad range of practitioners in the field; (b) seen by those practitioners as relevant and useful; (c) based on the evidence of what works, for whom, and in what circumstances, yet without being overly prescriptive; and (d) not driven by cost considerations but, rather, by the goal of making a real difference in clinical practice and health-related outcomes. Hence, although mindful of the above caveats, this research supports that practice guidelines significantly contribute to the betterment of health care provision and client outcomes (Darlenski et al., 2010).

Review of Literature:

Although there is a paucity of evidence on stressors in CCUs, the research based on the existing literature about stress in intensive care units (ICU) and critical care units (CCUs) has revealed that the humanisation of these units is closely linked with health care professionals' responses to stressors (Novaes et al., 1999; Marosti & Dantas, 2006). The literature review focuses mainly on articles written in or translated to English from 1960 to the current time (2011) in journals sourced from the Medline, PubMed, and CINAHL, supported by the key university library texts and the Cochrane Library.

2.3. Patients experiences of critical illness

The intensive care unit (ICU) is a stressful, unfamiliar and noisy place within which patients receive care (Johnson & Sexton, 1990; Soehren, 1995; Rotondi et al., 2002). There is an extensive body of research examining patients' experiences and recollections of their critical illness. The studies fall into six main areas. The first involves those which emerged in the early years of critical care and which were concerned with quantifying the number of patients who were able to recall their experiences, and the prevalence, incidence and relative ranking of 'stressors' among them (Jones et al., 1979; Bergbom-Engberge & Haljamae, 1989; Cochran & Ganong, 1989; Hweidi, 2007).

Traditionally, stress and coping research emerged from studies developed in the 1960s (Lazarus & Hagens, 1968). Items studied included physical stressors (e.g. pain, lack of sleep, noise from machines or staff conversation, difficulty in speaking when the endotracheal tube was connected, bright lights) and psychological

stressors (e.g. fear, feelings of isolation or of panic) (Cornock, 1998; Heath, 1989). Such studies, mainly of United States or United Kingdom origin, while vitally important in shedding light on aspects of patients' experiences, provided little opportunity to explore the lived experience of a patient's illness and nor were they concerned with how such experiences might be shaped by socio-cultural factors.

A second and related body of research has focused on the phenomenon of "ICU delirium" or "ICU syndrome" (Granberg et al., 1996, 1998). Different explanations are used to account for this phenomenon, with a consensus that a variety of factors are implicated, including: depression, fear, loss of memory, sensory overload, sleep deprivation, pain and use of sedatives, combined with a lack of ability to communicate, and a lack of family support (Axell, 2001; Dyson, 1999; Granberg et al., 1998, 1999; Justice, 2000; Laitinen, 1996; McKinney & Deeny, 2002; Roberts & Chaboyer, 2004; Rundshagen et al., 2002).

In recognition of some of the shortcomings of the quantitative research approach and the stress and coping model in addressing important questions about patients' experiences, a third body of research, informed by the phenomenological movement (van Manen, 1990), emphasises the importance of understanding the experience of critical illness from the patient's own viewpoint. This genre of research includes studies which provide insights into patients' experiences of bodily and perceptual transformation (Papathanassoglou & Patiraki, 2003), ventilatory support (Johnson, 2005) and social support (Bergbom & Askwall, 2000; Chen, 1990). Such research shows how the experience and meaning of critical illness is shaped through social and religious contexts.

A fourth strand of research emphasises patients' experiences of the nursing care they receive, with a particular emphasis on issues of communication. Patients who cannot communicate verbally report feelings of being overwhelmed, anxious and losing their sense of self (Carroll, 2007; Odell, 2000; Shattell, 2004). The nurse's roles in helping patients to convey their needs and emotions is shown to be a vital aspect of the critical care experience of patients (Schou & Egerod, 2008). Several studies highlight that patients feel frustrated and overwhelmed when nursing care lacks a quality which values and respects patients' individuality (Hupcey, 2001; Shattell, 2004).

The fifth theme concerns the long-term physical and psychological effects of ICU experiences and critical illness, and the phenomenon of post-traumatic stress disorder (PTSD) (Granja et al., 2005; Johnson et al., 2006). Longitudinal studies have shown that patients face a complex range of physical and psychological problems during recovery from illness, which can impair their quality of life in fundamental ways after discharge (Stoll et al., 2000; Griffiths & Jones, 2002; Jones et al., 2002; Capuzzo et al., 2005; Granja et al., 2005; Griffiths et al., 2006; Lf et al., 2006; Pattison et al., 2007).

During the last decade, a sixth area of research has emerged informed by the broad field of the sociology of health and illness. This highlights how patients' stories and narratives are an important resource for developing health care practice, and a way to share the illness experience with other patients and health care staff (Smith, 1987; Douglas, 1989; Frank, 1991; Richman, 2000; Rier, 2000; Zailani & Seymour, 2010). They promote the engagement of the patient as an active contributor to the organisation and delivery of healthcare (DIPEX, 2007). The research reported here

contributes two emerging bodies: the body of knowledge about critical illness based on patients' narratives about their experiences, and the body of quantifying patients' experiences in a CCU. The combination of these two bodies of research within one study will form the seventh new area in the field of patients' experience in aCCU.

2.4. Quantitative literature review

In several quantitative studies, researchers have attempted to increase understanding of the experience of stress in anICU, using different sample sizes, selection procedures and measures. Jones et al (1979) interviewed 100 patients in a surgical ICU using a questionnaire, and found that 5% had no recollection of the unit, and 55% had no recollection of how long they had slept. They further identified tiredness, insufficient sleep, unpleasant dreams and confusion as major problems. Twenty-one per cent complained of insufficient explanation of their condition and its treatment.

Asbury (1985) sent postal questionnaires to 112 discharged ICU patients, with a 68% response rate. One-quarter of the respondents could not remember anything on the experience. The problems identified were the occurrence of unpleasant dreams after discharge, sleep problems, and respondents having lost track of time while in the ICU. Most respondents mentioned that visiting arrangements were just right they were not disturbed by other patients and they did not worry about the ICU equipment. Ballard (1981) used a stress rating scale of 40 items to find out about the stressful elements of an ICU from 22 patients after discharge. Immobilisation and claustrophobia emerged as the most stressful elements. Of the top 18 items, "being tied down by tubes" was the item most frequently chosen by participants. The other stressful items were "having to wear an oxygen mask", and "not being able to move

your hands or arms because of the intravenous infusion”. Social isolation took the form of physical separation from family and friends, and the patients' familiar environment. “Missing their spouse” and “restricted visiting hours” were recognised as stressful. Sleep deprivation registered as another stressful item, which was related to noise, the unfamiliar environment and frequent health care related interventions.

Wilson (1987) developed the Patient Stressors Scale from the literature, and claimed that it had face validity and demonstrated test-retest reliability. It was administered to 38 ICU patients, who were asked to rate 22 stressors using a four-point scale. Twenty-two patients were classified as having transient delirium or impaired psychological response (IPR) by the mental status examination developed by Adams et al (1978). This group of patients identified significantly more stress on four items than the control psychological group. The four items were “too much noise”, “losing track of time”, “having doctors and nurses talk about the patient rather than to the patient” and “being examined by several doctors and nurses”.

In each of the above studies (Jones et al., 1979; Ballard, 1981; Asbury, 1985; Wilson, 1987), lack of randomisation was a limitation, and each used different instruments, which asked closed questions or pre-used questionnaires, in which respondents were requested to make choices related to specific questions. The different research instruments and small sample size (Ballard, 1981; Wilson, 1987), were limitations which made it difficult to generalise the findings. They did, however, provide useful information for deepening the understanding of personal experiences in an ICU.

The importance of exploring the perception of environmental stressors from both patients' and nurses' perspectives was first identified by Cochran and Ganong (1989) in the United States of America. They compared the perception of both patients and nurses, of environmental stressors in the surgical and medical ICUs at a large Midwestern Hospital in the U.S. The researchers emphasised that “the nurse play a major role to manipulate environmental factors to produce a more therapeutic setting. To do so, nurses need to know what seems stressful from the patients' perspective” (Cochran & Ganong, 1989; Cornock, 1998). Moreover, the authors found that ICU nurses perceived the ICU environment as being more stressful for patients than the ICU patients did themselves. In addition patients were more concerned about physical stressors, such as pain, or lack of sleep, while the nurses concentrated on psychological stressors: being out of control, spouse support, and inability to sleep.

Cornock (1998) conducted a replicated quantitative study of an earlier Cochran and Ganong study to investigate the perception of 71 patients and 71 nurses regarding the stressors faced by patients in two UK ICUs. The results were similar to those of Cochran and Ganong (1989). Cornock concluded that, “if the patients were fulfilling the role of the good patient, then this may mean that the nurses need to re-evaluate how they interact with the patients. If the patients are not expressing their needs the nurse must ensure that this is not because the patient is trying to please them” (Cornock, 1998). Cornock made recommendations to further examine this topic, as follows:

- 1- The differentiation between patients who are admitted to the ICU as emergencies and those who have planned admissions.

- 2- The use of different methodologies to counter any limitations of using the prepared list of stressors.
- 3- The use of interview techniques with the staff and patients to counter any problems with the Likert scale used.
- 4- The collection of the demographic data being extended to include items such as marital status and family relationships. This may provide valuable insight into patients responses to item 14 (missing your husband or wife), 22 (only seeing family and friends for a few minutes each day) and 47 (being unable to fulfil family roles).

Yava et al (2010) compared patients' and nurses perceptions of stressors in intensive care units in Turkey; 155 patients who were admitted to medical or surgical ICU and 125 nurses who were employed in the same units of two training hospitals in Turkey were enrolled in this descriptive study. The ICU Environmental Stressor Scale (ICUESS) was used to determine intensive care stressors. Results revealed that the total mean score of the ICUESS of nurses (133.23 ± 32.20) was higher than that of patients (91.41 ± 34.91). Both patients and nurses ranked 'fear of death' as the greatest stressor. Physiological stressors were identified as the most important stressors by both patients and nurses. Patients and nurses in medical ICUs were more affected by stressors than their counterparts in surgical ICUs. Patients with unplanned or emergency admission experienced higher stress levels than those with planned admission.

When comparing these results with the available literature results concurs with the previous research of Cochran and Ganong (1989) in US, Cornock (1998) in United Kingdom, Novaes et al (1999) in Brazil, So & Chan (2004) in China, Hweidi (2005) in Jordan, Biancofiore et al (2005) in Italy, Marosti and Dantas (2006) in Brazil, and

Pang and Suen (2008) in China. The topic was re-examined without paying attention to Cornock's (1998) recommendations and this could explain similarities in limitations and recommendations which were found within the above research. The following qualitative studies used open-ended questions to explore the feelings of the respondents.

2.5. Qualitative literature review

Exploration of the experiences of individuals recovering from critical illness using qualitative approaches is rather limited. Chew (1986) interviewed 13 ex-patients of a mixed medical and surgical ICU seven to fourteen days after being discharged from the ICU, using 24 questions which addressed psychological reactions to intensive care. Of this sample two patients had almost no memory of the ICU, and over half of the respondents complained of poor sleep that was related to pain, the general activities of the unit and being moved regularly. Excessive noise was reported as a stressor by two patients and the telephone ringing was identified as the worst stressor. Three patients reported hallucinations that may have been related to lack of sleep.

Simpson et al (2008) explored 59 patients' critical care experiences 24–48 hours after being transferred out of the ICU or CCU. They used four open-ended questions to stimulate recall of critical care experiences. The questions focused on patients' perceived reasons for ICU admission, sources of information, activities done and the overall impressions of critical illness. Thematic analysis revealed that nearly 80% of them were able to state accurately the reasons for admission. The physician was the most frequently cited source of information. Nearly half of the patients (44%) had neutral or positive comments about the overall impact of their critical care

experience, which was shown by statements such as “didn’t bother me a lot”, “didn’t disturb me at all”, and “I was glad they were doing something for me”. Among the negative statements, 36% were related to pain, 22% related to sleeplessness, and 12% related to fear and uncertainty.

In an exploratory study of memory recall, Green (1996) interviewed 26 patients 48 hours after they had been transferred out of the ICU. Twelve questions were used as a topic guide and cues to increase recall. The content was collated using thematic content analysis. Only two patients had no recollection of their ICU stay. Nearly three quarters of patients (73%) had psychological disturbances in the form of disturbing dreams, of , for example experiencing an earthquake, travelling through a desert, or nightmares related to being afraid, the belief that they were dying, or were going mad, and hallucinations. Two subjects continued to have hallucinations up to 96 hours after discharge because they still had sleep problems and were extremely frightened in the general cardiac ward. About sixty nine percent of the subjects recalled pain experiences and 50% described the pain as tolerable or causing discomfort while 31% recalled it as intense pain. Forty-two percent had sleep problems related to pain, noise and disorientation as to day and night. Seventy per cent of the subjects could either remember the name or describe the appearance of the nurses who had cared for them, while 52% were pleased that they could be transferred out because they thought that this would mean being discharged home sooner. The study also demonstrated that the patients could recall detailed explanations given by ICU nurses, implying that nurses needed to continue to explain nursing care procedures and medical conditions to patients in order to combat the fear and anxiety associated with ICU admission.

Heath (1989) reviewed and analysed the personal experiences of 11 health care professionals who had been patients in an ICU from 1957 to 1987. This review of personal accounts was very important as it tackled the myth that most of the staff working in an ICU believed that patients have few memories of their ICU stay. Patients, in this study did remember their ICU stay although there are certainly occasions where individuals cannot remember anything about their admission to the ICU. Intubated subjects recalled the presence of an endotracheal tube as being frightening and incredibly uncomfortable, especially during turning and positioning when the nurse was not supporting their head well. Several patients mentioned that, when they tried to support the tube in a more comfortable position, the nurse shouted or grabbed hold of their hands to stop them, mistaking the movement as self-extubation.

The patients appreciated frequent mouth care, careful handling of ventilator and airways tubing and airway and careful suctioning. Associated with intubation was the inability to speak, and patients expressed frustration about the lack of communication. They were pleased when the nurses were able to lip-read, or allowed them to use pen and paper, or to use a letter board. Noise in the form of staff conversation, radio and telephone was another aspect discussed by the subjects. Sixty four percent of patients found it difficult to distinguish day from night, which might have been related to sedation, disrupted sleep patterns and sensory deprivation (Wong & Arthur, 2000). Associated with sleep problems were dreaming, and auditory and visual hallucination, which could cause anxiety and disorientation from time to time. Commonly reported dreams were related to prison, torture and depersonalisation. Patients whose accounts were reviewed in this article

indicated that when they were conscious and awake, they appreciated the presence of their relatives, and liked touch and handholding.

In the context of comparing patients' experiences in an ICU from patients and nurses' perspectives, Wong and Arthur (2000) conducted phenomenological research using unstructured interviews, with 10 ICU nurses and 10 patients. Thematic analysis revealed nurses mostly believed that patients had memories of their ICU stay. Two clear categories emerged from the nurses responses: 'perception of the feelings experienced by patients' and 'perception of what patients experience as a support'. Nurses expressed that patients had feelings related to anxiety, pain, and tiredness and they were frightened by the environment and the unknown. Nurses provided support to the patients through pre-operative visits, continuous and repeated explanation, encouraging family visits and encouraging adequate pain relief and sleep. The patients' responses showed all the patients could remember at least some of what happened during their stay in the ICU. The two main categories which emerged from patients "feelings experienced" and "needs during the stay". Six patients suffered from moderate to severe pain during movement and procedures, and two patients complained of sleeping problems. Also, there was a call for extended visiting hours.

2.6. Comparison of patients', relatives', and professionals' perceptions

Novaes et al (1999) designed a comparative study which explored perception of stressors in 50 patients, 50 relatives and 50 health care professionals during the patients' stay in an ICU. They concluded that the professional team rated the intensity of stressors higher than the patients and their families and that there were no significant differences in the intensity of stressors rated between patients and

their families. There was, however, a significant difference in the total mean scores between patients and the professional team, which was congruent with the findings in previous studies (Cochran & Ganong, 1989; Cornock, 1998). Experience of sleeplessness and pain were also reported as the major problems by most patients in ICU (Russell, 1999; Wong & Arthur, 2000). So and Chan (2004) reported “being not in control of yourself”, “not being able to sleep”, “being thirsty” as being at the top of the list of six stressors ranked by patients, but these were ranked as the 9th, 11th and the 40th highest stressors respectively by the nurses. “Being Thirsty” and “loss of self-control” were low stressors as ranked by the nurses, but were rated high by the patients.

The experience of the critical care unit was found to not only affect the patients and nurses but also extended to the relatives caring for patients. It was reported that the family served as a buffer for emotional stress (Pang & Suen, 2009). Moreover, they often played the role of caregiver and were actively involved in making decisions related to treatment (Chui & Chan, 2007). Pand and Suen (2009), in Hong Kong conducted a five month quantitative study on 60 patients and 60 respective family members. Family members evaluated the items as significantly more stressful than the patients and this was incongruent with the study of Novaes et al. (1999) in which there was no significant differences level in the perception of patients and their relatives. They also highlighted the influence of cultural belief on the perceived stress level.

2.7. Recollection of ICU and CCU experience

Stein-Parbury and McKinley (2000) reviewed 26 studies that used either qualitative or quantitative approaches to examine patients' recall of the ICU experience. From the various qualitative papers reviewed, it was reported that patients often had vivid recollections of the ICU experience. Negative experiences included pain, anxiety, sleeping problems, and impaired cognitive functioning, while more positive experiences were associated with a sense of safety and security, promoted primarily by nurses. This supports the previous work by Hupcey (2000) and Green (1996), who describe a range of positive and negative memories of the ICU from patients either stable in an ICU or 28 hours post-ICU, with patients remembering in detail explanations and reassurances given by the ICU nursing staff. In a triangulated study it was found that patients had a feeling of safety and security whilst in the ICU, but, conversely, negative memories, such as inappropriate staff comments, continued to affect the patients' inputs up to six months post-ICU (Russel, 2000).

In a recent phenomenological study with eight participants, Papathanassoglou and Patiraki (2003) found transformations in perceptions, in lived-body, and in lived-time and space, as themes emerging in both conscious and dream experiences. Attitudes towards death were altered, and heightened spirituality was evident following the participants' critical illness experiences. In another phenomenological study, McKinny and Deeny (2002) explored, with six participants, the experience of transfer from ICU to a general medical ward. The emergant themes included a desire for normality, mixed feelings regarding transfer, feelings of despondency related to continuing physical complaints, differences between the ICU and the ward, and the enormity of the ICU experience influencing post-transfer emotions. The authors recommended greater continuity of care for those recovering from critical illness (McKinney & Deeny, 2002).

Some patients report vivid recollections of the ICU stay (Rundshagen et al., 2002; Rotondi et al., 2002), whereas others have poor or even no recollection at all of their stay. “No recollection at all” of the ICU stay ranges from 23% to 38% among some postsurgical patients (Capuzzo et al., 2001). Various authors have reported that patients had unpleasant recollections after a stay in an ICU. Patients recalled discomfort arising from anxiety, pain, thirst, inability to move, painful medical interventions and the presence of tubes (Leur et al., 2004).

2.8. Effect of stress on patient recovery

Florence Nightingale argued that the main aim of the hospital is that it should do no harm (Nightingale, 1854). However, in reality hospital environments, and especially ICUs, lead to patients experiencing a range of adverse psychological reactions which continue to cause distress for many months after discharge from hospital (Hewitt, 2002). There have been studies which have examined the impact of hospitalisation in an ICU on the patient's subsequent recovery at home. Although Russel (1999) and Adamson et al (2004) concluded that patients experienced physical and psychological problems, Maddox et al (2001) assert that patients do not suffer any sequel.

Adamson et al (2004) used in-depth interviews to examine the participants' memories of intensive care and hospitalisation at six months post-discharge, and to explore the impact of critical illness on their recovery. Researchers asked patients to provide insights into their critical illness and ICU experience and the meaning of this experience six months after discharge. The findings indicated that issues with pain, weakness, physical fatigue and psychological distress were still affecting them

even after six months. Similarities were found in previous research conducted by Russell (1999), in exploring the patients' perceptions, memories and experiences of the ICU, which also revealed that a sense of anxiety and depression can continue six months post-discharge. Both research studies suggested the need for a better integration of services, and continued support to release patients from stressors, are required for survivors of a critical illness up to and beyond six months post-discharge.

Cornock (1998) identified ICU syndrome as the psychological disturbances that result from either sensory overload due to exposure to many environmental stressors, or sensory deprivation. Dyson (1999) and Price (2004) supported Cornock's idea and emphasised that environmental factors were contributing to psychological disturbances and psychosis, rather than causing it.

However, quality of care can be influenced by a number of factors, such as the clinical professional skills of individual physicians and nurses, as well as their work environment and professional relationships (Welker-Hood, 2006; Kramer & Schmalenberg, 2008; Sevdalis & Brett, 2009). Lynn and McMillen (1999) stated the important message that the “nurse must be aware of the patients' priorities or areas of valuing to provide quality of care”. However, because of lack of both knowledge and technical competence, patients usually do not complain about nursing care quality even when it is inappropriately provided.

Cescutti-Butler and Galvin (2003) used a grounded theory approach to interview parents about nurses' competency in a neonatal intensive care unit. They concluded that parents' perceptions of nurses' competency were not based solely on skills and

tasks, but also on many caring behaviours such as learning to share responsibilities with families. Thus, to understand how to provide effective care to patients in hospitals, nurses must have relevant information about the patients served. However, to date, research to compare perceptions of the hospital environment, nurse physician relationships and quality of care on the part of both hospitalised patients and nurses is relatively limited.

Another theme in the literature is the long-term effects of an ICU/CCU environment on patients and whether psychological disturbance continues after discharge from hospital and how it affects them. The studies of ex-patients of ICUs adopted various methods, sample sizes and timings of data collection, ranging from: questionnaire (182 former ICU patients, 12 months after discharge) (Benzer et al., 1983); grounded theory (10 subjects, 12 months after discharge) (Compton, 1991); telephone interview (46 patients approximately nine months after discharge) (Friedman et al., 1992); face-to-face interview (54 out-patients, three months after discharge) (Daffurn et al., 1994); to unstructured interviews with thematic content analysis (26 patients three months after hospitalisation) (Hall Smith et al., 1997).

The long-term psychological effects of the ICU are less well documented. The studies that have been carried out show the emergence of certain psychosocial problems, such as personality changes, loss of social skills, sexual dysfunction and altered body image (Adam & Osborne, 1997). It has been asserted that many patients fail to recollect their experiences in the ICU (Turnock, 1997). This may be only partially correct, as for many patients the emotional essence of the episode remains long after discharge from hospital (Asbury, 1985; Laitinen, 1996). Patients continue to suffer nightmares and sleep deprivation for years following a critical

illness. In a survey carried out with 46 ICU patients following discharge, 46% contacted after a mean of eight months reported sleep disturbance and ICU-related dreams (Freidman et al., 1992). Flashbacks are a common theme recurring in studies. Post-traumatic stress disorder is characterised by flashbacks, recurrent nightmares, emotional numbing, hypervigilance and avoidance of the original trauma (Lloyd, 1993). Studies of patients who have been in exceptionally threatening or catastrophic accidents have shown them to be particularly susceptible to prolonged psychological reactions such as post-traumatic stress disorder (Lloyd, 1993; Viney, 1996; Griffiths & Jones, 1999).

Jones et al (1994) used postal questionnaires and interviews to assess patients' psychological problems occurring after a stay in intensive care. Of the 25 patients studied, 28% had unpleasant memories of having a tube, and being in pain two patients had nightmares, which continued when they went home, and one still found it difficult to talk about the dreams after six months. Forty-six per cent continued to suffer anxiety at two months post-discharge and this rose to 55.5% at six months. The percentage of patients experiencing anxiety following discharge in this study is noteworthy. Long-term research into the psychological experience of critically ill patients confirms that they are vulnerable to phobic anxiety states (Lloyd, 1993), which has implications for their ability to reintegrate into family life, employment and social groups. However, a small pilot study by Maddox et al (2001) did not confirm ongoing psychological trauma resulting from ICUs. The five patients and four significant others interviewed, denied any residual psychosocial difficulties following discharge to the community. Unfortunately, the sample criteria negate the results, as selection did not require a minimum duration of ICU stay. A brief experience of ICU stay would be unlikely to affect long-term psychosocial recovery.

As described earlier, Russell (1999) also explored patients' memories of the ICU six months after discharge and the after-effects of these experiences on long-term recovery. Of the 298 patients studied, 22 remembered dreams that contributed to persecutory delusions. These dreams lingered six months on, causing patients to remain fearful of sleeping. Further research is required into the long-term effects of ICU distress syndrome. Patients' who return to the unit following discharge, are a valuable source of action research; disclosure of personal experience in follow-up visits has revealed that patients remember believing they were imprisoned, fearing that their fate was certain death at the hands of their captors. Unfortunately, as avoidance of the fear-provoking stimulus is characteristic of post-traumatic stress disorder, patients who have phobic anxiety relating to the ICU are unlikely to participate in related research or to revisit the ICU through choice. This may partially explain the scarcity of data on the long-term effects of a stay in the ICU (Russell, 1999).

Despite the application of different research methods, these studies did show that patients suffered from residual effects of the ICU environment and routines, mostly in the form of sleep disturbances and nightmares. The frightening experience in ICU, whether it was related to the disease itself or to the ICU environment, has an important impact on recovery and rehabilitation. These studies highlight the need for ICU health care providers to understand, be aware of, and try to minimise the adverse effects of ICU environments, and help patients to recover from the experience.

The following studies investigated and/or reviewed the physiological, rather than the psychological, effects of procedures on patients in acute and critical care units. Bruhn et al (1970) examined 70 patients in a CCU who demonstrated a significant increase in blood pressure subsequent to witnessing a death. A greater proportion of patients who witnessed a cardiac arrest showed reduced blood pressure related to anxiety in the 48-hour period than those who did not witness cardiac arrest or death. Patients showed increased anxiety levels 24 hours after witnessing death as compared with the control group. A group of myocardial infarction patients who had been exposed to resuscitation on other patients showed a statistically significant increase in heart rate and had more premature ventricular contractions and chest pain than the control group (Sczekalla, 1973).

In a study by Vanson et al (1980), data were collected from 18 subjects who were cared for in an open unit and 18 subjects who were cared for in individual rooms with glass partitions. Patients in the open ward who had witnessed medical procedures such as insertion of a pacemaker or pulmonary artery catheter, or cardioversion in other patients showed a statistically significant increase in heart rate compared to patients in individual rooms who had not witnessed such medical procedures.

Patacky et al (1985) reported that the seven myocardial infarction patients with an intra-aortic balloon pump (IABP) had higher stress levels than those 10 patients who did not have one, or those 10 who had observed the insertion of one in the unit. (N.B. Editor's note: In some countries, screens/curtains are not used in ICUs/CCUs to the extent that they often are in the UK, so patients have witnessed such events, and perhaps still do. While this can be considered undesirable, it should be

remembered that what patients imagine as a consequence of what they only hear can be just as undesirable).

2.9. Socio-demographics, coping and locus of control

Coping has been described as “personality in action under stress” (Bolger, 1990), and theorists have suggested that “coping ought to be redefined as a personality process” (Vollrath, 2001). These ideas have been supported by evidence that personality and coping have a shared genetic basis (Kato & Pedersen, 2005) with correlations between personality and coping exceeding 0.60 (Houtman, 1990; Fickova, 2001). However, the magnitude, and even direction, of correlations between personality and coping has varied across studies, with many studies failing to demonstrate expected relations, despite adequate statistical power of analysis and use of reliable and valid measures (Horner, 1996; Lu & Chen, 1996). This inconsistency suggests that relations between personality and coping may be more modest than has been assumed or that moderators such as stressor severity, the focus or the reporting timeframe of the coping measure, or demographic factors influence relations.

Personality and coping are essentially equated in psychodynamic theory, with defence mechanisms conceptualised as stable traits that influence perceptions of events and dictate consistently as either adaptive or maladaptive responses (Suls et al., 1996). Although most researchers now distinguish between personality and coping, some conceptualisations of coping remain quite broad. For example, trait coping has been defined as “characteristic ways of responding to changes of any type in the environment” (Beutler et al., 2003), and many theorists consider automatic, unconscious, and involuntary responses to also be aspects of coping

(Skinner, 1995; Eisenberg et al., 1997; Skinner et al., 2003). In contrast, the transactional model of stress and coping de-emphasises the role of stable traits, defining coping as a conscious, intentional, goal-directed response, tailored to the specific demands of a stressor (Lazarus & Folkman, 1984).

To best preserve the distinction between personality and coping, we should limit the definition of coping to conscious, volitional attempts to regulate the environment or one's reaction to the environment under stressful conditions (Compas et al., 2001). Numerous models have been used to describe the structure of coping, with distinctions between problem and emotion-focused coping, engagement (approach, active) and disengagement (avoidant) coping, and primary (assimilative) and secondary (accommodative) control coping, being the most widely used (Compas et al., 2001; Skinner et al., 2003). Modern coping research began with the distinction between problem-focused coping, which intended to influence the source of stress, and emotion-focused coping. The latter form of coping has the intention of minimising negative emotions through strategies such as emotional expression, support seeking, and avoidance (Lazarus & Folkman, 1984). The engagement-disengagement distinction focuses on an orientation towards or away from stress, with engagement coping involving active attempts to manage a situation or associated emotions. Disengagement coping involves distancing oneself from the stressor or related feelings.

The distinctions made between primary and secondary control coping emphasises coping goals, with primary control coping geared towards changing the stressor or related emotions through strategies such as problem-solving or emotion regulation. Secondary control coping goals are centred on an adaptation to stress through

strategies such as acceptance or cognitive restructuring (Rothbaum et al., 1982). Although coping strategies are not universally beneficial or detrimental, problem-focused coping, engagement coping, and primary and secondary control coping typically predict better physical and mental health. In contrast, emotion-focused coping may typically predict poorer outcomes (Compas et al., 2001). Although all of these distinctions remain widely used, confirmatory factor analyses have shown that no one distinction alone adequately reflects the structure of coping (Ayers et al., 1996; Connor-Smith et al., 2000). In addition to this, these distinctions have been critiqued both for failing to include the full range of coping strategies (e.g. the primary/secondary control distinction ignores disengagement) and for combining disparate strategies into overly broad dimensions (Coyne & Gottlieb, 1996; Compas et al., 2001; Skinner et al., 2003). For example, measures of emotion-focused coping combine strategies as diverse as relaxation, seeking support, wishful thinking, and avoidance. They include forms of negative emotional expressions (e.g. crying, worrying, breaking things) that are confounded with distress and psychopathology (Coyne & Gottlieb, 1996).

A recent review of coping literature revealed more than 100 coping categorisation schemes, along with multiple scoring systems for common coping measures (Skinner et al., 2003). Recent confirmatory factor analyses (Tobin et al., 1989; Ayers et al., 1996; Walker et al., 1997; Connor-Smith et al., 2000) have generated a greater consensus about the hierarchical structure of coping. At the top of the hierarchy is the distinction between engagement and disengagement coping. At the next level, engagement coping can be further distinguished by coping goals into primary and secondary control engagement strategies. This hierarchical coping model suggests three core families of coping, each comprised of more specific coping strategies. Disengagement coping includes strategies such as avoidance,

denial, wishful thinking, and withdrawal. Primary control engagement coping includes strategies targeted toward changing the stressor or related emotions, through problem-focused coping or efforts to regulate and appropriately express emotions. Secondary control engagement coping includes strategies emphasising adaptation to stress, such as acceptance, cognitive restructuring, positive thinking, or distraction (Compas et al., 2001; Skinner et al., 2003).

Although some of the models make additional distinctions within these three categories (e.g. having social support as a separate factor), these distinctions can be reflected in analysis of specific coping subscales. All people experience problems and stressors in their lives and must find mechanisms with which to cope with these difficulties. These stressors range from the everyday, and mundane, to the more significant and serious, such as losing one's job and illness (Carver et al., 1989). How people cope with stress varies from person to person and from situation to situation (Ben-Zur, 1999).

In the social science literature, ethnicity is often considered a proxy for socioeconomic constructs and socio-cultural factors. Individuals who are exposed to the same event can experience different reactions (Aldwin, 2004). As a result, further understanding of individuals' differential experiences is important. A primary appraisal of traumatic events in the context of coping may be important to understand individual differences (Bjorck & Klewicki, 1997). In fact, individuals' perceived controllability over traumatic or stressful events is related to different emotions (Benight & Bandura, 2004; Zuckerman et al., 2004). Coping behaviours also may be related to personality and situational factors (e.g., the type of event, available resources, and the level of distress experienced (Bjorck & Klewicki,

1997). Further, these variables may be related to individuals' psychological adjustment following stress events such as problems in relationships, understanding the associations between locus of control and coping behaviours. Comprehension of these variables may help to identify processes related to individuals' psychological adjustment.

The context of sleep medicine may provide a good example here, where ethnicity might play a unique role in understanding insomnia symptoms (Jean- Louis et al., 2007). Many objective studies in the US have suggested that individuals of African origin have characteristically better sleep patterns (Ancoli-Israel et al., 1989; Redline et al., 1997), relative to those of European descent. The preponderance of evidence indicates lower rates of insomnia symptoms among the former. This is evident in two important epidemiologic studies: Duke's Established Populations for Epidemiologic Studies of the Elderly (≥ 65 years old) and the Cardiovascular Health Study of non-institutionalised Medicare enrollees specifically, in the Duke's studies, where 24% of older Black (African) individuals complained of sleep disturbances compared to 76% of older White (Europeans) individuals (Blazer et al., 1995). This is consistent with data from the Cardiovascular Health Study, which found that 68% of White (European) and 62% of Black (African) individual reported nocturnal wakefulness (Whitney et al., 1998). Although the contrast is less striking, in a more recent study examining ethnic differences in the rate of insomnia symptoms from a community-based sample of older Caucasian White (European) (40%) and Black (African) (60%) Americans, findings indicated that ethnicity was the best predictor of sleep disturbances (Jean-Louis et al., 2001).

Factors entered in the regression model included socio-demographics, health risks, stressors, social support, and mood. Specific reports of insomnia symptoms included: difficulty getting to sleep, difficulty staying asleep, and early morning waking. Early morning sleep pattern rates for European men and women were 41%, 75%, and 46%, respectively, whereas for their African counterparts, rates were 14%, 37%, and 17% respectively. One explanation for this disparity is reporting bias, commonly noted among older Africans that might have influenced underreporting of insomnia symptoms (Anderson et al., 1987; Knight et al., 1995; Jean-Louis et al., 2007). Usually, reporting biases result from difficulties in understanding survey questions, poor recall, and social desirability. Conceivably, ethnicity alone might be inadequate as a proxy to explain differences in the rate of the reported insomnia symptoms of older adults.

The issue of locus of control may be helpful in understanding primary appraisal. Locus of control refers to an individual's belief that the outcomes of their behaviour or the consequences of an event are due to chance, luck, or fate (e.g. external locus of control) or are a function of their own behaviour (internal focus of control) (Kohli et al., 2011). The author suggests that an external locus of control is related to less favourable outcomes (e.g. poor physical and psychological health), when individuals do not take responsibility for improving situations that can be changed. In contrast, an internal locus of control is related to more positive outcomes (Kohli et al., 2011); it may not be related to favourable outcomes, however, when actions are ineffective or are matched inappropriately to a situation. For example, an individual's feelings that they have control over the outcome of an uncontrollable situation may lead to more distress when their behaviour is seen to be ineffective or unrealistic (Lopez-Vazquez & Marvan, 2003; Zuckerman et al., 2004).

The relationship between locus of control and the selection of specific coping behaviours has yet to be examined. Theoretically, this relationship is examined indirectly, however, in studies that relate perceived self-efficacy and the perceived controllability of an event. Self-efficacy, or an individual's belief that they are able to cope with a stressful event and to handle future stressful events, is related to an individual's motivation to act (Benight & Bandura, 2004). When individuals believe that a potential threat is unmanageable or uncontrollable, they may dwell on their perceived inability to cope, ruminating on the severity of the potentially threatening situation. When individuals believe that they have control or the ability to handle a stressful event, however, they are more likely to utilise active coping behaviours. This sense of power and use of active coping behaviours may reduce stress and levels of anxiety (Benight & Bandura, 2004). Thus, an individual's beliefs regarding the controllability of an event appear to be related to the types of coping behaviours they use and, in turn, to the levels of stress they experience.

Individuals with internal attribution style may experience greater psychological stress as a result of feeling little control over the outcome of an event. Such findings appear relevant to the relationship between locus of control and an individual's functioning (Gray & Lombardo, 2003). In fact, an individual's experience of an uncontrollable stress event may be related to their feelings of helplessness (Ben-Zur, 2005). Such feelings may have devastating effects for individuals who have an internal locus of control; their lack of control, or their use of ineffective coping behaviours in the context of an uncontrollable event may be related to increased levels of stress (Lopez-Vazquez & Marvan, 2003). If these relationships hold true, it may be more useful for individuals to employ an external locus of control when

faced with an uncontrollable stressor and to employ coping behaviours that are not active in nature in an attempt to facilitate their psychological adjustment.

In the literature, three general categories of coping behaviours tend to be discussed: problem-focused, emotion-focused (Lazarus & Folkman, 1984; Carver et al., 1989; Ben-Zur, 2005; Connor-Smith & Flachbart, 2007), and avoidant (Roth & Cohen, 1986) coping behaviours. Problem-focused coping behaviours refer to problem-solving techniques that reduce or eliminate a stressor. Emotion-focused coping behaviours reduce or eliminate the emotions related to or cued by a stressor (Carver et al., 1989; Ben-Zur, 2005). Other researchers (Roth & Cohen, 1986) also describe avoidant coping behaviours, suggesting that coping behaviours be dichotomised as an approach (e.g. those that allow for appropriate action, including problem-focused and emotion-focused coping) and avoidance (e.g. those that allow for movement away from threat in an effort to reduce stress) behaviours. Research suggests that these coping behaviours are related to an individual's psychological adjustment, but show inconsistent results.

In general, problem-focused coping behaviours are related to increased physical and psychological well-being and to decreased stress. In contrast, emotion-focused coping behaviours are often related to increased distress and to more negative physical and psychological outcomes (Aldwin & Yancura, 2004; Penley et al., 2002). Furthermore, problem-focused coping behaviours may enhance the ability of the individual to actively deal with stressors, whereas emotion-focused coping behaviours aim to eliminate the stress response rather than the actual stressor. It should be noted, however, that problem-focused coping behaviours may be ineffective in increasing well-being and may increase stress, whereas emotion-

focused coping behaviours may be related to beneficial outcomes when stressors are not controllable. In addition, although avoidant coping behaviours may be helpful in providing time to assemble personal resources in the initial phases of coping (Holahan & Moos, 1986), they also may interfere with appropriate actions that could affect the nature of the stressful situation (Roth & Cohen, 1986). For example, if avoidant coping behaviours are used over a long period of time, psychological dysfunction may occur, as individuals fail to confront a crisis directly (Holahan & Moos, 1986). Further, emotional numbness, unwanted intrusions of threatening material, and disruptive avoidance behaviours may result (Roth & Cohen, 1986).

There is a need to further examine factors that may serve as precursors in the relationship between coping and psychological adjustment. One such factor, controllability, appears to be related to the use and efficacy of various coping behaviours (Penley et al., 2002; Zuckerman et al., 2004). For example, in a meta-analysis of the coping literature, results suggest that some coping behaviours (e.g. distancing, seeking social support, accepting responsibility, wishful thinking, avoidance) are moderated by the controllability of the situation (Penley et al., 2002). It appears that problem-focused coping behaviours increase the likelihood of a positive adjustment when individuals view stressors as controllable, possibly as a result of increased self-confidence in dealing with stressors, as well as a realistic appraisal of how to handle those (Zuckerman et al., 2004). Although emotion-focused coping behaviours may result in less favourable outcomes (Alwin & Yancura, 1987), the use of such behaviours may be beneficial for uncontrollable stressors. Thus, an event's controllability is related to an individual's coping efficacy but should be examined in conjunction with an individual's perception of controllability.

Research has yielded conflicting evidence about differences in coping strategies between men and women. Jordan and Revenson (1999) found that in coping with infertility, women were significantly more likely to use certain strategies, such as seeking social support and escape-avoidance, than their partners. Similarly, Slusarcick et al. (1999) reported different mechanisms of stress reduction by men and women even though both were performing an identical stressful activity. Locus of control was a significant predictor of ill-health only for women (Muhonen & Torkelson, 2004). Silver et al. (2002) showed that following a major stressor, women were significantly more likely to experience post-traumatic stress symptoms than men. The researchers in the field are, generally, of the opinion that men and women choose different coping behaviours to handle stress.

Many of these studies indicate that men are more problem-focused, while women are more emotion-focused in their coping strategies (Blanchard-Fields et al., 1991; Endler & Parker, 1990; Ptacek et al., 1992). Rosario et al. (1988) developed a socialisation hypothesis that predicted more problem-focused coping in males and more emotion-focused coping in females. Using daily “hassles” rather than a major stressor, Hamilton and Fagot (1988) examined this hypothesis and found that although women reported more overall stress, the methods of coping were not significantly different for them, casting some doubt on the socialisation hypothesis. Hashim and Zhiliang (2003) also found only minor differences in the perception of stressors.

Marosti and Dantas (2006) conducted a similar study among 43 patients in the CCU of a large hospital in Brazil. They aimed to observe how stress was experienced by

patients hospitalised in the CCU, as influenced by their socio-demographic characteristics and clinical variables. Their data collection instrument (ICUESC) addressed the following socio-demographic characteristics: gender (female or male), civil status (married or living with someone, single, widowed, divorced), and professional situation (active, retired, retired with paid activities, at home, unemployed/temporarily suspended from work). Relevant data also included: existence of previous hospitalisation and presence of equipment during hospitalisation. With respect to socio-demographic variables, women presented a higher mean value of stressors than men.

Marosti and Dantas (2006) explored the relationship between age and perceived stressors. Findings highlighted that the younger the patient, the higher the stress levels during hospitalisation in the CCU. They also found that female patients who did not receive psychotherapeutic medication, experienced the presence of more than two pieces of equipment and who had no earlier hospitalisations at this kind of intensive therapy unit, had a significant level of stress.

Hweidi (2005) conducted a cross-sectional study of 165 patients 2–3 days post-discharge from the CCU, in two general hospitals in Jordan, using the ICU Environmental Stressor Questionnaire. The main stressors identified by patients were physical stressors, which included: being in pain, not being able to sleep, hearing the buzzers and alarms of the machinery, being thirsty, and lack of self-control. Psychological stressors, such as separation from family, hearing the cry of others, etc., were the least stressful factors identified by patients. In addition to this, single and older patients with low economic and educational levels, experienced more difficulty with stress levels than their counterparts.

Within the context of the effect of religious and cultural beliefs in coping with and adapting to stress, Zeilani and Seymour (2010) conducted a study to explore Muslim women's experience of suffering in a Jordanian intensive care unit. A narrative approach was employed to access women's stories of their critical illness. Sixteen women who had spent at least 48 hours in an ICU were recruited from two hospitals within the city of Jordan, for a period of six months. Women's accounts of suffering were pervaded with physical, social, spiritual, and technological themes. Pain was a central standard in the women's accounts, and was often experienced as severe, overwhelming and disturbing to their sleep. The sudden onset of illness, the unfamiliar ICU environment and feelings of uncertainty made it difficult for the women to interpret their experiences. Religious beliefs and cultural norms helped the women make sense of their suffering. Social support, especially from the family, was reported by the women to be essential: a lack of social support was seen as a symbol of death (Zeilani & Seymour, 2010).

2.10 Personality, Stress and Coping in Intensive Care Nurses

The concept of stress and its implications at both the individual and organisational level within the health service is of interest around the world, and has been intensively studied, particularly over the past two decades. Stress-related research has emanated from developed countries such as the United Kingdom (UK) (Payne & Frith-Cozens, 1987; Sutherland & Cooper, 1990; Rees & Cooper, 1992; Wheeler, 1997; Smith et al., 2000; Batata, 2005), France (Embriaco et al., 2007), Australia (Healy & McKay, 2000), the United States (US) (Foxall et al., 1990; Volk & Lucas, 1991; Hays et al., 2006; Mealer et al., 2007), and developing countries such as Thailand (Tyson & Pongruengphant, 2004) and China (Li & Lambert, 2008).

At the organisational level, Sutherland and Cooper (1990), whose research relates to industry, noted correlations between stress and increases in error rates, less effective team working, more dissatisfaction from service users and employees and an increase in staff sickness and absence rates. These variables resulted in greater problems with retention and recruitment of experienced staff. It seems that the findings related to industry also apply in the health service setting, since research completed by Kinsey et al. (2005) shows that stress is associated with reduced effectiveness in work and is a major reason for employees leaving the health profession altogether.

Adomat and Killingworth's (1994) study focused on the ICU and the identification of organisational factors such as management style and conflict between colleagues as the most significant cause of stress. Furthermore, a phenomenological study explored the issue of staff turnover (Cartledge, 2001) and found that stress related to dealing with both death and the intense pace of work was a common theme amongst the lived experiences of ICU nurses. It is feasible that the organisation can cause stress in the individual and conversely, the physical and psychological manifestations of stress can have a deleterious effect on the organisation.

The negative effects of the excessive demands that the work environment can bring to the individual have been well documented, with both physical and psychological effects being highlighted. Stressors can have an impact on most bodily systems, producing measurable transient effects which arguably lead to severe, chronic or even acute physical health problems (Mealer et al., 2007; Steptoe, 1990). From a psychological perspective, stress is associated with the feeling of anxiety,

depression, subjective fatigue, and reduced confidence and self-esteem. All of these psychological symptoms have been shown to influence the ability to perform work-related tasks (Kincey et al., 2005).

In view of the demanding workplace environment experienced by ICU nurses, it is perhaps not surprising that Mealer et al. (2007), in their comparative study of ICU and general nurses (n = 490), found that there was evidence of post-traumatic stress disorder (PTSD) in ICU nurses that related specifically to their working environment. About 25% of ICU nurses tested positive for PTSD, compared with 14% of general medical nurses (p = 0.03). Mealer et al. (2007) claimed that some of the traumatic events associated with PTSD in ICU nurses are similar to those experienced by war veterans; the cited events include the handling of dead bodies and caring for trauma victims.

The study of Mealer et al. (2007) paints a picture of ICU as a demanding environment which leaves nurses anxious and depressed. However, their experience of working in ICU and the contention of Chiumello et al. (2000), Wheeler (1997) and Norrie (1995) is that this is an extreme position, which does not accurately portray the situation of UK ICU nurses – who, in the main, flourish in the ICU environment. One explanation for this anomaly lies with the personality traits of the nurses and the coping strategies that they employ to handle working in an ICU. How individual nurses cope with stress has been of interest to researchers (Bailey, 1985; Bolger, 1990; Williams et al., 1992; Carver & Scheier, 1994; Hays et al., 2006; Chang et al., 2007).

The conceptual analysis of coping by Lazarus et al. (1966) was the starting point for many of these studies. Lazarus et al. (1966) assert that stress consists of two appraisal processes, namely, the primary appraisal of the threat, and the secondary appraisal of how to respond, and these interact with the individual's execution of the coping response (Lazarus & Folkman, 1984). The coping response is categorised by Lazarus into problem-focused coping, which involves efforts to solve the problem or master the situation, and emotion-focused coping, where there is an attempt to reduce the negative feelings associated with the threat, rather than alter the source of the threat.

Emotion-focused coping also encompasses avoidance coping, where an individual withdraws mentally from dealing with the situation or uses substances such as alcohol or drugs (Cohen et al., 2008). It is thought that the use of humour as an emotion-focused coping strategy can act as a means of releasing tension. "Gallows" humour takes its name from the genre of jokes about the condemned man or the hopeless victim, and has become a term used for humour in the work environment; it is seen as a method of coping in *harsh* settings, like an ICU, so that negative feelings can be developed into positive acceptance. The use of humour is considered by some as an effective coping strategy in the critical care environment (Martin & Lefcourt, 1983; Healy & McKay, 1999); however, not everyone agrees that humour, particularly "sick" humour, is healthy. Mitchell (1988) argued that use of such strategies, in a stressful context, may itself be a telltale sign of distress.

Lazarus and Folkman (1984) argued that coping is a transaction between the person and the event, and that coping changes over time; for example, adolescents tend to use distancing or confrontational strategies, young adults problem solve, while older

people tend to use escape-avoidance and self-blame more often (Irion & Blanchard-Fields, 1987). However, there is some merit in the argument that people develop habitual methods of dealing with stressors, and through studying these habits or coping styles, it is possible to predict how that individual will react in new situations (Carver & Scheier, 1994; Tyssen et al., 2001).

It is well known that personality plays an important role in the stress-coping process (DeLongis & Holtzman, 2005), the appraisal of the event as stressful (Gunthert et al., 1999) and the likelihood of engaging in certain coping strategies (David & Suls, 1999). Evidence has accumulated to demonstrate that various personality characteristics are related to how people cope with stress; for example, Scheier and Carver (1987) described how an optimistic person may use more “problem-solving” strategies. In their discussion article on stress and personality in daily life, DeLongis and Holtzman (2005) support the use of the model of personality dimensions (Costa & McCrae, 1985), arguing that it represents the minimum number of traits required to describe normal personality. They found that people who have a neurotic personality trait appear to choose an ineffective coping strategy for a given situation; extroverts, on the other hand, appear to be more effective active copers (O’Brien & DeLongis, 1996).

The studies that consider the position of ICU nurses shed some light on the level of stress that they exhibit, demonstrating that despite experiencing a greater number of stressors in their working environment, ICU nurses are no more stressed than their ward-based colleagues (Lloyd-Jones, 1994; Norrie, 1995; Chiumello et al., 2000). However, here they raise concern on the relevant currency of the studies that they accessed.

Work stressors for nurses are varied, and include: conflict with physicians, inadequate preparation, problems with peers, problems with supervisors, discrimination, workload, and uncertainty concerning treatment, dealing with death, and dying patients, patients/their families, and leadership and management issues. Also cited are, professional conflict, mood disturbances, age and experience, the emotional demands of caring, lack of skills and length of experience, conflict with others (especially nurses and physicians), lack of clarity about tasks and goals, low social support in the workplace, and the nursing shortage (Brown & Edelman, 2000; Demerouti et al., 2000; French et al., 2000; Healy & McKay, 2000; Bratt et al., 2000; McGowan, 2001; Payne, 2001; Finlayson et al., 2002; McVica, 2003).

Workload and dealing with issues of “death and dying” were the most prevalent stressors among Jordanian nurses (Hamaideh et al., 2008). The researchers reported that shift work, nurses’ educational level, and model of nursing care were the best predictors of Jordanian nurses’ stressors.

Studies about nurses’ job stressors and social support behaviours in ICUs are limited. A marked exception is the research of Tyler and Ellison (1994), who reported that nurses’ coping with “death and dying” as a source of distress, was ranked higher in ICUs compared to medical-surgical care units, and that nurses in theatres ranked psychological stressors lower than nurses in intensive care units.

Requirements for “Intensive Care Nursing” differ from one country to another. For example, requirements of this speciality in the UK are very clear, such as ICU knowledge. It requires that 84% score are demonstrated by Basic Knowledge

Assessment Tool or valid certification or demonstration of knowledge and competency, successful completion of ACLS within 18 months of employment, and updated every two years (University of Kentucky, Chandler Medical Centre, 2003).

Although definitions of “work environment” vary by country and by health care delivery systems, a supportive and productive work environment will definitely enhance true collaboration and increase the likelihood of better quality of patient care (Welker-Hood, 2006; Kramer & Schmalenberg, 2008). Evidence has shown that the hospital environment and working relationships, directly or indirectly affect nurses’ job satisfaction, burnout, turnover and the quality of care (Aiken et al., 2002; Kramer & Schmalenberg, 2003; Smith et al., 2005; International Council of Nurses, 2007, p. 3; Manojlovich et al., 2009; van Bogaert et al., 2009).

Muntlin et al. (2006) also indicated that although patients rated the quality of care at an emergency department as fairly good, a high percentage of inadequate quality marks were related to environmental factors such as atmosphere and standards. Additionally, Tervo-Heikkinen et al. (2008) conducted a survey to examine the interrelationships between the nurses’ work environment and nursing outcomes on 34 acute care wards, and found that nurses who felt less job-related stress reported a better professional nursing environment and a higher level of job satisfaction. Thus, nursing managers need to place more emphasis on building a favourable hospital environment as a strategy to attain high quality of care.

Nurse-physician relationships are subject to a number of influences, including differences in gender, in education, years of working experience, socio-economic status, organisational culture and patient care responsibilities (Hojat et al., 2001;

Thomas et al., 2003; Tabak & Koprak, 2007). However, a multidisciplinary interventions study by Vazirani et al. (2005) illustrated that although collaboration and communication were improved in the intervention units, differences in physicians' and nurses' perceptions of collaboration may reflect the different definitions of collaboration. Additionally, a survey by Anderson (1996) indicated that although the majority of nurses perceived positive interpersonal relationships with physicians, they also felt that the greatest source of stress was nurse–physician interpersonal conflict. Chang et al. (2009) also confirmed that nurses had generally higher scores for perception of collaborative relationships than did physicians.

Nevertheless, poor relationships between nurses and physicians can cause stress, frustration, and anger, which can impede communication and collaboration, resulting in avoidable medical errors, adverse events, and other factors that compromise the quality of patient care (Rosenstein & O'Daniel, 2005). Furthermore, Rosenstein (2002) found that nurses' morale was strongly influenced by the nature of their daily interactions with physicians. Hence, improving collaborative relationships between physicians and nurses facilitates quality of patient care. The primary goal for nurses is to pursue positive patient outcomes and to increase their satisfaction with care (Rosenstein & O'Daniel, 2005).

However, quality in health care is a function of many factors, including hospital environment, timeliness of communication with physicians (Manojlovich et al., 2009), nurse–physician relationships (Kramer & Schmalenberg, 2003; Hendel et al., 2007), nurse staffing levels (Aiken et al. 2002), skills of individual physicians/nurses (Sevdalis & Brett, 2009), and hospital priorities, policies and managerial support for nurses (Laschinger et al., 2003; Tervo-Heikkinen et al., 2008). Thus, perceptions of the quality of care can be subjective and differ across

cultures and health care delivery systems. For example, Buerhaus et al., (2005) noted that 79% of registered nurses (RNs) in the USA perceived a shortage of nursing as a major problem influencing the overall quality of patient care in hospitals. Additionally, Milisen et al. (2006) indicated that a stressful work environment was reported by hospital nurses in Belgium as an obstacle to providing good nursing care to patients. Thus, to create a favourable practice environment and improve relationships with physicians, nurses must hear directly from patients and use the information collected to guide quality improvement.

Path analysis has also indicated that quality of patient care is directly affected by patients' perceptions of nurse–physician relationships, as well as by their satisfaction with the hospital environment and years of education of the nursing staff. Correspondingly, nurses who felt better about nurse–physician relationships and those who were more satisfied with the hospital environment perceived better quality of patient care. These findings concur with previous researchers (Welker-Hood, 2006; Kramer & Schmalenberg, 2008). Their conclusions were that quality of care can be influenced by the work environment and professional relations (Welker-Hood, 2006; Kramer & Schmalenberg, 2008; Sevdalis & Brett, 2009). In addition, Boswell et al. (2003) asserted that if nurses had good relationships with physicians, they would feel comfortable and confident when communicating with them.

McCauley and Irwin (2006) pointed out that true collaboration among interdisciplinary professionals in the workplace is important and effective for transforming the work environment to promote patient-focused care. These findings imply that if the hospital environment and nurse–physician relationships are improved, the quality of patient care thrives. However, as patients' length of

education was much lower than that of nurses in this study, they may have had difficulty assessing the quality of patient care due to knowledge deficits. Thus, there is a need for future researchers to investigate whether years of education and other personal characteristics affect, or are associated with, outcomes.

Assessing stress is likely to be very difficult in an occupation as diverse and challenging as health care, yet the effectiveness of organisational interventions to reduce or eliminate sources of stress depends on a sound understanding of the stress phenomenon for nurses. Smith et al. (2000) reviewed the implications of the subjective aspects of stress perception for nurses who, with teachers and managers, are a professional group most likely to report very high levels of workplace stress. It is the transition to severe distress that is likely to be most detrimental for nurses, and is closely linked to staff absenteeism, poor staff retention, and ill-health (Healy & McKay, 1999; McGowan, 2001; Shader et al., 2001). If severe distress is to be prevented, then it is important to understand what factors promote the transition. Nursing provides a wide range of potential workplace stressors, as it is a profession that requires a high level of skill, team working in a variety of situations, provision of 24-hour delivery of patient care, and input of what is often referred to as “emotional labour” (Phillips and Pearson, 1996).

Additionally, temporal changes in the sources of stress might also be anticipated, as working conditions are not static. Indeed, recent years have seen a number of changes in the structure of the United Kingdom (UK) National Health Service (NHS), in prioritisation of services, and in the roles of nurses, as detailed in policy documents published by the UK Department of Health (1998a, 1998b, 1998c, 1998d, 2003, 2006b).

2.11 Psychosis and Post-Traumatic Distress Syndrome

The range of effective and psychotic phenomena that may be observed in practice on ICUs includes: anxiety and fear, mild/severe psychosis with hallucinations, sleep disturbance and nightmares (Asbury, 1985; Morrison, 1994; Hafsteindottir, 1996; Laitinen, 1996; Russell, 1999). From personal clinical experience, many nurses recognise the existence of the ICU distress syndrome and its clinical features, but few appear confident in exploring the “lived experience” of the syndrome with patients and their families.

As the psychological trauma continues for patients for many months after discharge (Jones et al., 1994; Russell, 1999), management of the syndrome is relevant for all concerned in patient care, not just the critical care team. ICU syndrome therefore remains an important topic for exploration. The psychological effects of ICUs have been well documented and there are vivid accounts in the literature of the acute distress experienced by patients. Functional psychosis has been described, with reports of illusions, delirium, and tactile and visual hallucinations, as well as delusions and disorientation (Mackellaig, 1987; Lloyd, 1991; Granberg et al., 1999). Midazolam, a benzodiazepine sedative, may cause particularly disturbing sexual hallucinations (Dundee et al., 1991). Rosenthal (1996) recalls the presence of gargoyles and witches during her time as a patient in intensive care. These impressions led to a fear of impending death and mistrust of ICU staff.

Schnaper & Cowley (1976) reported that 25 trauma patients believed that they were being held captive, and 14 recalled attempting to escape. Their study showed a surprisingly high percentage of patients remembering distressing delusions, which

may have been a consequence of the initial impact of the illness or injury and resultant post-traumatic stress experience. Studies of patients who have been in exceptionally threatening or catastrophic accidents have shown them to be particularly susceptible to prolonged psychological reactions (Lloyd, 1993). The incidence of ICU syndrome has been variably reported as 12.5–72% (Keep et al., 1980; Weber et al., 1985; Wilson, 1987; Dyson, 1999).

Nurses often fail to recognise the patient's psychotic experience until the patient becomes overtly agitated and deluded (Hopkinson & Freeman, 1988; Roberts, 2001). This may be because of the patient's inability to communicate verbally, and nurses' inexperience in recognising the non-verbal signs of psychosis. Whilst scoring systems for sedation and pain are integral elements of nursing care in an ICU (Olleveant et al., 1998), assessment of psychological needs is not formalised. Development of psychological assessment charts could facilitate early identification of perceptual disturbances and direct nurses consciously to address problems of mood and perception in care planning and in discussion with colleagues.

It may be argued that, nurses within ICUs being more comfortable in dealing with patients who exhibit confusion and disorientation than with the manifestations of psychosis, may be due to the nurses' training and education. It is important to discuss with the patient their experience of perceptual disorder, and to emphasise the "normality" of these experiences and their transient nature. If these issues are not addressed, then the patient is left isolated, in a world that is frightening and bizarre (Roberts, 2001).

Anxiety, stress and despair are components of ICU syndrome (Glen, 1991). Laitinen (1996) used a phenomenological study to explore 10 patients' experiences in an ICU. Data revealed patient memories of significant confusion and anxiety during the "twilight state" between awareness and unconsciousness. The methodology was appropriate to the small sample size. Larger studies are often problematic, because of the limited size of an average ICU and the high mortality rates therein. Anxiety states have been further explored in a retrospective study of 304 patients carried out by Bergbom-Engberg and Haljamae (1988). A total of 28.5% (n=86) of patients recalled feelings of insecurity, fear and panic. Anecdotal evidence further explored these results and described personal experiences of insomnia and anxiety linked to inability to communicate and total dependency on others (Clarke, 1985).

As anxiety and fear become the overpowering responses to stress for ICU patients, their primary need for such patients is to feel secure. Hupcey (2000) carried out a qualitative study of 45 adult, critically ill patients who had been in an ICU for a minimum of three days. Unstructured interviews revealed that their overwhelming need was to feel safe. Family and friends, ICU staff and religious beliefs influenced positive feelings of security. Feelings of knowing and regaining control helped patients to hope and trust with confidence.

2.12. Stressors Causing Post-Traumatic Distress Syndrome

A number of contributory stressors have been assigned to the development of ICU syndrome. Sensory deprivation has been recognised, and has been defined as a reduction in the quality or quantity of sensory input (Hudak et al., 1997). Five types of alteration in sensory input, which may lead to abnormal behaviour, have been identified: an absolute reduction in the amount and variety of stimuli, little variation

in stimuli, excessive noise, physical and social isolation, and restriction of movement (Clifford, 1985; Gelling, 1999). Dyer (1996) argues that patients experience “psychological torture” in an ICU, where abnormal levels of sensory input produce feelings of fear in the victim. The criteria used by Amnesty International are given as evidence to support this argument, and include sensory isolation and overload as instruments of torture. In earlier work Dyer (1995a) examined specific aspects of sensory overload in ICUs and referred to “white noise”, the background hum from equipment, and “white sight”, the visual monotony of constant electrical light.

In an American study by Ulrich (1984), the records of post-operative patients were examined to assess whether being in a room overlooking trees and plants influenced the recovery period. Twenty-three patients had a shorter post-operative stay and received fewer analgesics, in comparison with a matched sample in identical rooms facing a brick wall. Although it is possible that other variables may have influenced results, it seems that the interaction between person and environment has a significant impact on recovery of health (Dyson, 1999).

Sensory deprivation and overload are problems peculiar to an ICU. There is an intense level of harmful stimuli, which does little to reduce disorientation and fear. The dehumanising technology in ICUs may be counteracted by the nurse who, through talking and explaining to the patient continually, provides an interface with the high technology medical care (Dyer, 1995b; Elliott & Wright, 1999).

2.12.1 Noise

The noise and pace of ICUs are significant stressors for patients (Lloyd, 1993). Noise levels may be intense and have been estimated to be as high as (50–70) decibels (Dyer, 1996). Contributory factors are inappropriate alarm settings, suction equipment left on after use and telephones (Dyer, 1996). Dracup (1988) advises that noise level should be used as a criterion when purchasing equipment, to reduce “white noise” intensity within the ICU. As monitor and ventilator alarms contribute largely to high noise levels, consideration should be given to setting realistic physiological parameters, and then resetting these as the patient’s condition changes.

Apart from mechanical equipment, other researchers have discovered that medical – and more so, nursing – staff were just as responsible for noise production in the ICU (Bentley et al., 1977; Noble, 1979; Hilton, 1985; Kryter, 1994; Meyer-Falcke et al., 1994; Christensen, 1997; Kahn et al., 1998; Chmiel et al., 2004). These researchers concluded that nursing and other allied health care staff were responsible for approximately 80% of the noise produced within the ICU. Staff conversations, the playing of radios, physicians’ ward rounds, staff teaching sessions, providing patient care and communicating with relatives were found to be the most common cause for excessive noise being produced on the ICU.

Staff conversations have been regarded as a significant source of noise and confusion for patients (Russell, 1999). Personal discourse provides fertile ground for misinterpretation in semiconscious patients (Hartshorn et al., 1993). Nursing and medical staff often fail to acknowledge a sedated patient’s presence when discussing their physiological condition and treatment plans. When patients are not overtly aware, there may be comment on their poor prognosis at the bedside, increasing

their fear of impending death and debility. As it is not possible positively to assess a patient's level of awareness, patients may be "locked in" with the fears and anxieties resulting from partially understood conversations.

Anecdotal accounts have, however, provided an alternative viewpoint. Robinson (1974) gives a personal testimony of his experience as an ICU patient, and recalls the happy conversations and footsteps of nurses as "comforting noise". The lack of certain "normal" noises, such as the television, radio, traffic, conversation of friends, etc., has in fact been identified as a cause of stress for some patients, and the deficiency in orientating cues being contributory to confusion and disorientation (Lloyd, 1993; Thelan et al., 1994).

Russell (1999) explored patients' memories of the ICU six months after discharge, and the after-effects of these experiences on long-term recovery. Using a combination of interviews and questionnaires, 298 respondents were asked to describe their memories of the ICU. Patients remembered hearing bits and pieces of conversation during bedside ward rounds, which led to misinformation and fear and contributed to persecutory delusions. Consultant ward rounds normally include considerable numbers of staff at the bedside. A sedated patient is then subjected to increased and unexplained noise levels and activity. In a phenomenological study of coronary artery bypass graft patients, Laitinen (1996) described reactions to sudden increases in activity levels; patients reported experiences which led them to believe that the fast-paced environment of the ICU would ultimately draw them into a vortex of confusion.

The latter work of Christensen (2005b) strengthens this premise, that ICU nursing staff do have a knowledge deficit with regard to the effects of excessive noise exposure within the unit, where the consequences can have a profound effect on patient well-being. Using a multiple-choice questionnaire, this study found that ICU nurses were unable to identify specific levels of noise, the physiological effects of noise exposure in terms of immune suppression, wound healing and stress hormone stimulation, and current legislation regarding noise exposure. Even more interestingly while this cohort was able to attribute noise exposure as being one of the contributing factors causing ICU delirium, many of the nurses (80%, n = 76) were unable to identify the typical behaviours associated with this condition.

Yet, the exact source of excessive noise pollution within the ICU is multifactorial, for the very reason of the close proximity care and the array of medical instrumentation attached to patients to monitor their progress throughout their stay in ICU. Balogh et al. (1993) suggested that the majority of noise created in their ICU was created by mechanical alarms. Kahn et al. (1998) found that the most common mechanical devices producing high-intensity sounds were the monitor alarms and, strangely, the television. In an observation period lasting 160 minutes, the monitor alarms were being triggered 20% of the time, equating to an alarm every five minutes throughout this period. While this is cause for concern, it must be remembered that alarms are not going off continuously; as such, while they comprise of high-impact sound, they are intermittent.

As for the effects on critical care patients, research indicates that prolonged exposure to excessive noise levels has a deleterious effect on cognitive task function and altruistic behaviour (Seidlitz, 1981; Topf & Dillon, 1988; Baker & Holding, 1993; Christensen, 2002; Cacase, 2006; Patterson & Schrader, 2006). The impact of

excessive noise exposure can result in “burnout” in critical care patients and staff (Topf & Dillon, 1988). Yet, critical care nursing staff appear to have little appreciation/knowledge of the wider psychophysiological effects of exposure to excessive noise levels. In relation to this, nursing care of the critically ill patient appears to remain consistent throughout a 24-hour period, and as such the ritualistic practice of subduing lighting during the night appears to make little difference in the noise levels being reported (Balogh et al., 1993; Kam et al., 1994; Christensen, 1997).

2.12.2 Pain

Pain is a great area of concern for patients. Nurses are not good at judging the incidence or severity of pain (Gallagher et al., 2000), and studies of ICU patients report that pain is rated as the greatest stressor experienced (Chew, 1986; Wilson, 1987; Todres & Holloway, 2006). In a study surveying the views of 100 discharged ICU patients, Turner et al. (1990) explored the stressors in an ICU. Forty-four per cent of patients reported tracheal suctioning as the most unpleasant experience, and 48%, arterial blood gas sampling. Both of these events were significant because of their association with pain. These findings may be generalised to wider populations, as the researchers were careful not only to select a sample from a wide range of religious, occupational and educational groups, but also from those who had a variable diagnosis. Ballard (1981) used a similar methodology to grade patient stressors, but his study showed the most significant issues to be immobility and the discomfort of being tied down by tubes and machinery.

The presence of tubes and lines can be very distressing for patients, particularly during suction procedures and changing position. The numerous invasive

procedures the patient endures create a situation where there is not only frequent pain, but also the fear and expectation of pain (Dyer, 1995b). The patient may then come to associate the nurse's touch with the presence of pain, leading to increasing levels of panic and paranoia. Todres and Holloway (2006) used a hermeneutic-phenomenological approach to relate the experiences of an ICU nurse who was admitted to an ICU on three occasions. Many aspects of care and treatment proved to be painful, such as: being turned; physical restrictions caused by machinery; suctioning; coughing; invasive procedures; gastro-intestinal disturbances caused by fluid management, with the resultant need for a rectal tube; and physiotherapy. As a consequence of experiencing constant pain, the patient reported the need for more sedation. Although this study considered the memories of only one patient, its phenomenological research approach allowed a rich insight into the patient's world.

As the patient was also an ICU nurse, she was more able to identify exactly which procedures caused the most pain. With current practice aiming to minimise the level of sedation used in critical care (Shelly, 1998), this study raises an ethical dilemma, in considering whether it is too painful for patients to be "lightly sedated". Pain should be assumed unless its absence is confirmed, and adequate assessment and relief of pain is essential (Asbury, 1985; Dyer, 1995b; Shelly, 1998). Assessment tools used in practice often concentrate on unreliable physiological responses, such as hypertension, to indicate pain and sedation levels. The assumption of pain is therefore essential in a patient who is unable to communicate, and local anaesthetic should be used in performing invasive procedures, even when patients appear to be adequately sedated. Alternative methods of pain relief, such as transcutaneous electrical nerve stimulation, or relaxation therapy may also be effective in supplementing pharmacological methods.

2.12.3 Visiting and Social Support

Research on stress and coping has shown that one of the most effective means by which individuals cope with stressful events is through social support. There is substantial evidence showing the benefits of many forms of social support for both mental and physical health (Seeman, 1996; Thoits, 1995). To date, however, there has been little consideration of how the patterns of social relationships that are assumed and practised in a given socio-cultural context affect the use, and effectiveness, of social support. That is, how people decide to solicit and receive support is likely to depend heavily on the nature of the relationships they have within their social networks (Taylor et al., 2004). Even two equally supportive social networks might differ in the norms that guide interactions and the shared expectations of how a person and the network are connected to each other. Consequently, decisions to seek social support are likely to be affected by these norms and expectations (Shin, 2002).

Research in cultural psychology has shown that the norms that govern the nature of relationships differ greatly across cultures (Taylor et al., 2002). For example, individuals are encouraged to promote and maintain their distinctiveness and act according to their own volitions, in more independent cultures, such as in North America and Western Europe. In contrast, individuals are encouraged to focus on their relationships and act to maintain harmony within a group in more interdependent cultures, such as in Asia (Markus & Kitayama, 1991; Triandis, 1989). These differences in expectations and norms concerning the relationship between a person and their social network are likely to affect how and whether individuals seek and use social support.

Social support is defined as the perception or experience that one is loved and cared for, esteemed and valued, and part of a social network of mutual assistance and obligations (Wills, 1991). Taxonomies of social support have usually examined several forms. Information support occurs when one individual helps another to understand a stressful event better, and to ascertain what resources and coping strategies may be needed to deal with it. Instrumental support involves the provision of tangible assistance such as services, financial assistance, and other specific aid or goods. Emotional support involves providing warmth and nurture to another individual and reassuring the person that he or she is a valuable person who is cared about. Social support has long been known to mute the experience of stress, enhance well-being, reduce the severity of illness, and speed recovery from health disorders when they do occur (Seeman, 1996; Thoits, 1995).

An extensive quantity of psychological literature has examined the beneficial effects of social support in terms of specific transactions involving the seeking and receiving of help, in the context of coping with specific stressors (Lazarus & Folkman, 1984; Wills, 1991). A considerable quantity of literature has implied, however, that social support need not be activated to be helpful. For example, Wills (1991) has examined social support using structural measures to assess the number of social relationships and roles in which an individual is involved, and the structure of the interconnections among those relations (Thoits, 1995; Wills, 1998). The fact that social ties are associated with indicators of mental and physical health implies that merely having these ties may have benefits.

Moreover, this author suggests that at least under some circumstances, the perception of social support, that remains, in actuality, unutilised, is more beneficial than social support that is actually mobilised. For example, Wethington and Kessler (1986) found that perceived social support was a stronger predictor of adjustment to stressful life events than received support. There are several possible reasons for this finding. These include the fact that overly intrusive social support may exacerbate stress (Shumaker & Hill, 1991). Efforts to provide support to others may be perceived as controlling and interfering by the recipient (Lewis & Rook, 1999). The support that a network member provides may be different from that which is needed, and may fail to match the needs of the recipient (Cohen & McKay, 1984; Cohen & Wills, 1985). In addition, Bolger et al. (2000) found that when people actually drew on specific members of their social support networks for help during stressful times, support-seeking often served as an additional cause of distress. This was because expressing one's needs to others was experienced as esteem-reducing, and/or drawing on another person for support was perceived to tax that other person's resources, such as their time and attention.

The author suggests that reliable cultural differences in how people view the self and their relationships, may have implications for whether or not they use social support to cope with stress. Westerners tend to view a person as independent and separate from other people, whereas Asians tend to view a person as fundamentally connected with others (Shweder & Bourne, 1984; Triandis, 1989; Markus & Kitayama, 1991). This difference might lead to the assumption that coping via social support would be especially common among Asians, because of the emphasis placed on interconnectedness with the social group. In fact, however, the opposite may be the case. The idea that social support involves specific transactions, whereby

one individual enlists the help of another in service of his or her problems, may be a particularly Western conceptualisation of social support. The independent view of the self that is prevalent in the Western cultural context holds that individuals take actions that are oriented toward the expression of their opinions and beliefs, the realisation of their rights, and the achievement of their goals (Fiske et al., 1998; Kim & Markus, 1999). The conceptualisation of social support in terms of explicit transactions presupposes that it is appropriate to enlist others in meeting those goals. Thus, stressed individuals may focus primarily on themselves and their goal of coping with the stress, and recruit the time and attention of others in this process.

In contrast, Asians tend to view a person as primarily a relational entity, interdependent with others. In this cultural context, social relationships, roles, norms, and group solidarity typically are more fundamental to social behaviour than an individual's needs. This interdependent view of the self holds that a person should conform to social norms and respond to group goals by seeking consensus and compromise; as such, personal beliefs and needs are secondary to social norms and relationships (Fiske et al., 1998; Kim & Markus, 1999). In Asian cultural contexts, because emphasis is placed on maintaining harmony within the social group, any effort to bring personal problems to the attention of others or enlist their help may risk undermining harmony and/or making inappropriate demands on the group.

There is some research on social support transactions and their effects in Asian countries. The research has largely focused on specific stressors, such as managing a mentally retarded child (Shin, 2002), or caring for an elderly parent (Ng, 2002). Many of these studies are exploratory surveys that provide descriptions of support

needs without examining cultural influences. Nonetheless, several findings are consistent with the above reasoning. The author shows that European Americans are more likely to report needing and receiving social support than are Asians and Asian Americans (Wellisch et al., 1999; Hsieh, 2000; Shin, 2002). Moreover, one study (Liang & Bogat, 1994) found that received social support had a negative buffering effect on Asians (e.g. it made Asians feel more stressed).

An open visiting policy, defined as a policy that imposes no restrictions on visiting hours, duration of visits and/or number of visitors, seems to fit better with patient and family needs (Buchardi, 2002; Berwick & Kotagal, 2004; Verhaeghe et al., 2005; Marco et al., 2006). The presence of family is a positive factor for the patient, giving comfort and reducing their stress level (Giannini, 2007; Eriksson & Bergbom, 2007; Roland & Russell, 2001). Clinical practice guidelines about family-centred care also recommend unrestricted visiting policy in adult ICUs (Davidson et al., 2007). Visiting policies in hospitals for paediatrics, including paediatric ICUs, and obstetrics, have changed in the last two decades. Conversely, adult care units, both general care and intensive care units have been slow to change their family visiting practices (Gonzalez et al., 2004).

Examples of examining the effectiveness of visiting guidelines were detailed in Dutch, French, and Italian studies. The Dutch ICU guidelines, that aim to guarantee high quality patient care, do not mention visiting policies; they only describe organisation and workflow (NVVA, 2006). The aim of the NVVA (2006) survey was to study visiting policies in Dutch ICUs in order to provide an overview of current practice concerning visiting policies in the Netherlands. At the same time, they investigated whether ICUs work in accordance with clinical guidelines for family-centred care in visiting policies or not; whether the visiting policy was an

issue for nurses; how nurses informed family members about the visiting hours; the difference in policy between ICUs having a single room for each patient and the ones that do not; and the difference between ICUs in university hospitals, large teaching hospitals and general hospitals. The study reports that none of the ICUs in the research has an open visiting policy. The majority of the Dutch ICUs (85.7%) have restricted visiting policies, although family-centred care guidelines underline the importance of unrestricted visiting times.

In some other European countries, open visiting hours on adult ICUs is also not very common. A French study showed that 97% of ICUs have limited periods of access (de Tinténiac et al., 2002). In Italy, there are no specific data dealing with this subject, but Giannini has reported that ICUs in Italy generally have highly restrictive visiting policies (Giannini, 2007). In Flanders, (Dutch-speaking Belgium), only 3.3% of the ICUs have an open visiting policy (Berti et al., 2007). Based on this study, Berti suggested that ICU nurses tend to be sceptical about an open visiting policy, and that the majority of nurses believe that open visiting policies interfere with direct nursing care. Several studies support these findings of rather negative beliefs regarding open visiting policies and their potential impact on the process of patient care (Marco et al., 2006; Roland and Russell, 2001).

However, other studies have described more positive beliefs and attitudes among ICU nurses regarding the effect of open visiting policy on the nursing care of the patient (Garrouste-Orgeas et al., 2007; Plowright, 1998). Although in the Netherlands very little research exists about intensive care nurses' beliefs and attitudes regarding open visiting policy, it seems plausible that the perceptions of

Dutch intensive care nurses will not differ significantly from those described in other research literature.

2.12.4 Sleep

Sleep deprivation has been explored in both laboratory conditions and in the clinical arena. Symptoms of sleep deprivation have been shown to include restlessness, disorientation, combativeness, delusions, hallucinations, anxiety and increased illness (Thelan et al., 1994). Noise levels in ICUs have a significant impact on the quantity and quality of sleep the patient receives (Chew, 1986). Topf et al. (1996) used simulation with audiotapes to explore the consequences of recorded ICU noise on sleep patterns. Ninety-four per cent of the experimental group (31 patients) reported sleep disruption. The control group found it easier to fall asleep and to remain asleep without waking. This study is of limited significance, as it fails to take into account other variables that may contribute to sleeplessness in the ICU. It does, however, provoke scrutiny of the iatrogenicity of ICUs. If the physically well person may so easily experience disequilibrium, how much more so is the physically traumatised patient susceptible to sleep deprivation and its effects?

The unvarying 24-hour routine of an ICU means that patients may be unable to distinguish night from day (Dyer, 1995a). Small or blacked out windows, with continuous artificial lighting of a constant strength, remove natural cues to circadian rhythms (Thelan et al., 1994). Perceptual disturbances, proximity of staff and unnecessary nursing interventions carried on throughout the night lead to interrupted sleep of poor quality (Dyer, 1996). In a study by Chew (1986) of 11 ICU patients, 50% experienced sleep disturbance, and attributed this to levels of pain, anxiety, light and frequent nursing intervention. Dimming light levels at night and reducing

unnecessary nursing tasks should therefore become customary, to promote natural sleep and the re-establishment of normal diurnal rhythms (Dyer, 1996).

Patients in ICUs commonly experience sleep disturbances, and state that these problems continue throughout their stay in the ICU (Freedman et al., 1999). Changes in normal sleep and rest activities can be related to the critical care environment of the ICU or the critical nature of an illness, and also to the nursing interventions and the effect of medications (Fontaine 1998; Bourne & Mills, 2004; Tracy, 2006). In the ICU, patients who have difficulty in falling asleep, may be wakened from sleep by noise, anxiety, pain, frequent treatments and nursing care interventions, and by the monitors (Bucher, 2004; Pathasarathy & Tobin, 2004; Tracy, 2006).

Numerous factors have been reported to contribute to sleep disturbance in ICU. The specific nature of the environment, together with the invasive and persistent nature of management strategies employed in ICU, make it difficult to identify and alleviate causes of sleep deprivation. Evidence suggests that sleep disruption is most likely due to a combination of intrinsic and external factors, which impact differently across patients, according to the particular circumstances of each. An individual patient's illness, and prior experiences, together with a fluctuating severity of illness, impact on their potential to achieve effective sleep. Particular causes identified include: pain and discomfort, nursing and medical procedures, mechanical ventilation, the ICU environment (including noise), pharmacological agents and severity of underlying disease (Drouot et al., 2008; Reishtein, 2005; de Jong et al., 2005; Honkus, 2003).

2.12.5 Causes of Sleep Deprivation

A. Environmental Factors

Noise has been widely cited as the most common cause of sleep disruption in the critically ill (Honkus, 2003; Drouot et al., 2008). Noise from equipment, such as alarms from the monitors, ventilators and other equipment, together with staff-related noise and ringing telephones, are commonly reported causes of sleep disruption in ICU (Kass, 2008; Coyer et al., 2007). Noise initiates a sequence of physiological changes, including vasoconstriction, raised diastolic blood pressure, pupil dilatation and muscle tension (Honkus, 2003). Furthermore, noise is implicated in causing sympathetic system stimulus, resulting in the release of adrenaline, which prevents relaxation, and consequently stops the patient from falling asleep.

The control of noise exposure in the hospital environment is fast becoming a serious issue, in response to which many European and American hospitals are adopting a policy of extensive noise reduction. The World Health Organisation's (WHO) (2002) external review policy on community noise has produced guidelines that identify specific noise levels within hospital environments. The recommendations include noise levels not exceeding 35 decibels [dB(A)] during the night and 40 dB(A) during the day. However, the Health and Safety Executive (2005) stipulate that noise levels within the work place should not surpass 85 dB(A). While the latter may well be acceptable within the confines of an industrial complex, within the hospital environment this is unacceptable, when consideration is given to the effects of excessive noise exposure on patients.

The physical characteristics of sound determine noise, in that the loudness of sound is dependent on its amplitude or intensity. However, defining noise is difficult because it may be influenced by a number of variables – for example, cultural and social factors as well as individual sensitivities. Furthermore, the very nature of noise may vary considerably; it may appear as a pure tone, a narrow or wide band frequency, as an impulse or as an impact (Christensen, 2005a). Therefore, noise may be considered as random, fluctuating waveforms that interfere with desired signals (Kam et al., 1994), and may be further defined as any unwanted sound that physiologically and psychologically disrupts performance, is annoying and is stressful (McDaid, 1990; Baker, 1993; Kam et al., 1994; Kryter, 1994).

The consequences of exposure to excessive noise levels are well documented within the literature, with effects including cardiovascular stimulation (Marshall, 1972; Andren, 1980; Snyder-Halpern, 1985; Baker, 1992; Baker et al., 1993), pituitary and adrenal gland stimulation (Falk and Woods, 1973) and an ineffectual immune response to infection as a result of immune system suppression (Monjan & Collector, 1977; McCarthy et al., 1992; Wysocki, 1996). Just as important and relevant to the intensive care unit (ICU) environment, is that exposure to excessive noise levels is a contributing factor in the development of the condition known as “ICU delirium” or “ICU/CCU distress syndrome”, due to its effect of disrupting sleep (Helton et al., 1980; Baker, 1992; Marshall & Soucy, 2003).

Indeed, the early work of Morgan and White (1983) identified that while critical care nursing staff appeared to have a good understanding of the patients’ need for sleep, they found that in some cases nursing staff could not differentiate between essential and non-essential procedures and acceptable levels of noise. Moreover,

nursing staff felt that because the majority of patients were critically ill or sedated, the need for noise reduction was not applicable – yet were unable to provide a rationale as to why this might be. Therefore, the taking and recording of observations was done primarily because of the nature of the nurses job.

Although noise was one of the most often cited factors responsible for sleep deprivation, Stanchina et al. (2005) argued that the degree of noise did not affect the frequency of sleep disruption. In a study conducted by Freedman et al. (2001), where the aim was to establish the effect of environmental noise on sleep disruption in ICU, it was revealed that noise was indeed responsible for disruption of quality of sleep, but not necessarily for quantity of sleep. Freedman et al. (2001) used continuous polysomnography (PSG) and environmental noise measurements for 24–48 hours in 22 patients, two of whom were not mechanically ventilated. Their study showed that environmental noise was responsible for 11–17% of disruptions, and wakings from sleep.

However, Freedman et al.'s (2001) study was small ($n = 22$) and included only two ICUs. In Olson et al.'s (2001) observational study, which aimed to determine whether reduction of external environmental stimuli was associated with increased frequency of sleep interruption, the control group had more interruptions than the intervention group. This study was limited, however, by the inclusion of neurological patients only, and also by its relatively small numbers (intervention group = 118, control group 122). Furthermore, this study employed observation as the only method of data collection, which meant that the quality of sleep was not addressed. Stanchina et al. (2005) also did an observational study, which included polysomnography (PSG) on four healthy subjects, with a view to establishing

whether or not sleep disruption would be low with light noise in ICU. Their findings were that sleep disruption did not increase with peak noise. However, the limitations of that study were that it was not done in an ICU environment; rather, noise was generated artificially, which may not reflect the true variation of the amplitude in a unit over time. Also, their sample size was small ($n = 4$), which impedes the generalisability of the findings.

B. Nursing Interactions/Procedures

Nursing interactions and procedures with patients were also noted among the factors that were responsible for sleep disruptions in the critically ill. Tamburri et al. (2004) conducted an observational study in which they reviewed 50 records of patients from four ICUs, in order to establish the number of times nurses performed procedures with patients during the night, over the course of 147 nights. Tamburri et al. (2004) found that there were more interactions with patients at midnight and less at around 03:00 hours, and only nine out of the 147 nights allowed for a 2–3-hour period of uninterrupted sleep. However, this was a retrospective (review) study, in which the patients were neither observed nor interviewed. While this study established that disruptions do occur that prevent protracted periods of sleep, it unfortunately relied solely on written nurses' records, without observation of actual practice.

Furthermore, the study did not incorporate tools for the assessment of quality of sleep – neither polysomnography (PSG), or any other tool for measuring quality of sleep, was used. The lack of knowledge among nurses about the nature of sleep,

sleep physiology, and the psychological and physical benefits of sleep, was a factor that was attributed to nurses disrupting patients' sleep by doing procedures frequently, and at inappropriate hours of the night (Honkus, 2003). However, Olson et al.'s (2001) study showed that while nurses were knowledgeable about the importance of sleep, they found it hard to organise their procedures to give their patients even a two-hour break from interruption, because such was the nature of their responsibility as critical care nurses. Intrinsic factors such as the severity of the underlying critical illness were noted to play a part in sleep disruption (Drouot et al., 2008; Parthasarathy & Tobin, 2004).

In particular, the severity of critical illness was associated with increased production of catecholamines, which caused sleep disturbance (Parthasarathy & Tobin, 2004; Pandharipande & Ely, 2006). Furthermore, inflammatory mediators produced in sepsis were also believed to play a role in disrupting normal sleep patterns (Friese, 2008; Reishtein, 2005). However, very little literature is to be found supporting this phenomenon.

Apart from the fact that critical illness was examined as one of many factors that impact simultaneously, drugs were also considered as intrinsic factors, for Freedman et al. (2001). For example, benzodiazepines, opioids, continuous infusions of inotropes (catecholamines), antihypertensives, antipsychotics, and antidepressants (including anticonvulsants) were listed among the drugs that caused sleep disruption in ICU patients (Drouot et al., 2008; Parthasarathy & Tobin, 2004). Although having noted intrinsic factors that contribute to sleep disruption in ICU patients, there has not been much research dealing with the intrinsic factors such as catecholamines. Drouot et al. (2008) and Parthasarathy and Tobin (2004)

recommended the use of Propofol and Precidex instead of benzodiazepines like Midazolam and opioids like morphine, to improve quantity and quality of sleep. However, the above are all literature reviews; there was no original study found in support of these assumptions. Polysomnography (PSG) has been found to be the most reliable tool for assessing sleep in critically ill patients (Parthasarathy & Tobin, 2004; Pandharipande & Ely, 2006; Drouot et al., 2008).

However, the difficulties associated with the use of sleep drugs in intensive care cannot be overlooked. Nurses' use of observation and inspection, in spite of their being readily available to assess sleep with special sleeping tools for critically ill patients, was deemed unreliable, because they were believed to result in over-estimation of quantity of sleep. and possibly, not account for quality of sleep (Parthasarathy & Tobin, 2004).

Pain and discomfort were found to contribute to sleep disturbance. Pain was attributed to surgical and medical procedures and the lines that were used as part of the therapies (Jacobi et al., 2002; Honkus, 2003). However, optimal pain relief in critically ill patients is difficult to achieve, because patients are unable to communicate due to mechanical ventilation devices and sedation (Coyer et al., 2007). Discomfort was attributed to being uncomfortable sleeping in hospital beds, the inability to assume usual comfortable positions for sleeping and also not being able to do usual bed-time rituals, such as having a glass of milk or reading a good book (Honkus, 2003). Monitoring equipment, along with unregulated, uncomfortable room temperatures, contributed to discomfort and thus, caused sleep disturbance (Honkus, 2003). Without communication, however, it is difficult, or rather, impossible, to determine a patient's feelings, unless a patient is shivering, has

a rigour, high temperature or feels hot to the touch. Sedatives and analgesics used to promote sleep and comfort during illness, could render the nurses' assessment and reading of the patient's condition inaccurate (Drouot et al., 2008; Parthasarathy and Tobin, 2004; Pandharipande and Ely, 2006).

Parthasarathy and Tobin (2004) stated that Midazolam can produce increased levels of catecholamines, which impair sleep. This is unsupported by the available literature. In contrast, benzodiazepines shortened the time taken to fall asleep and reduced sleep disruptions, increasing the duration and efficiency of sleep (Drouot et al., 2008; Honkus, 2003; Jacobi et al., 2002; Pandharipande & Ely, 2006); they were found to suppress rapid-eye movement sleep (REM) and slow wave sleep; however, because at low doses, they increased the number of spindles and at high doses, they reduced the EEG amplitude and frequency. REM sleep and slow wave sleep (the most restorative sleep stage) were also suppressed by narcotics, because they caused a dose-dependent slowing of EEG. Hence, drug-induced sleep could be said to mimic natural sleep without producing the physiological benefits which true sleep produces.

Non-benzodiazepine sedatives such as Zolpidem and Zolpizone were recommended. However, Zolpidem can produce very harmful side effects in hospitalised patients, as there were a few reports to the effect that it can cause sleep driving and sleep walking (Friese, 2008) and quality, (NSW Department of Health, 2008). Precedex, a sedative-analgesic, was found to promote slow wave sleep (SWS); it did not suppress SWS, and it inhibited the secretion of noradrenalin, which inhibits SWS (Friese, 2008). Contrary to Friese's finding, Jacobi et al.'s (2002) extensive literature review found that Precedex suppressed SWS. Jacobi et

al.'s (2002) study was based on older findings, whereas Friese's work is more recent. Other medications, such as beta blockers like Metoprolol and Propranolol, caused sleep disturbance because of their ability to easily cross the blood-brain barrier and cause nightmares (Friese, 2008).

Despite the fact that Methyldopa increased rapid eye movement (REM) and SWS, it caused sleep disruption because it caused nightmares (Honkus, 2003). Continuous infusions of inotropes (catecholamines) for blood pressure support and to increase cardiac output, also caused sleep deprivation in ICU patients, because of their stimulating the reticular activating system (Friese, 2008). The negative impact of these drugs on the patients' experience of ICU is considered justified, given their life-saving impact. Diuretics were reported to disturb sleep because they cause urinary frequency. Angiotensin-converting enzyme inhibitors, calcium channel blockers, anticonvulsants, corticosteroids, Theophylline, neuroleptics, antihistamines, anticonvulsants and antidepressants, negatively impacted on patients' sleep (Pandharipande & Ely, 2006; Honkus, 2003). Once again, rapid-eye movement (REM) inhibiting drugs were not the only reason why patients had disrupted sleep (Reishtein, 2005). Similarly, Freedman et al.'s (2001) study found that most of their patients who were not on REM- inhibiting drugs also experienced sleep disruption. Most of the data above is based on literature reviews, and more research is needed to substantiate these claims.

Continuous lighting in ICU also contributed to sleep disruption (Reishtein, 2005), as it interfered with the biological clock, which is responsible for regulation of the wake-sleep cycle (circadian rhythm) (Pandharipande & Ely, 2006; Jacobi et al., 2002). However, de Jong et al. (2005) stated that some studies have not found sudden changes in lighting to affect patients' sleep. The accuracy of sleep

assessment by nurses was questioned by Honkus (2003), and supported by Drouot et al. (2008), who suggested that in many instances nurses are reported to assess sleep merely through observation, which results in overestimation of sleep duration and a failure to account for sleep fragmentation. PSG was found to be a more reliable method in assessing sleep in critically ill, ventilated patients (Drouot et al., 2008; Reishtein, 2005). However, this method is impractical in ICU, as it requires the attachment of electrodes to the patient's head. It is more work for the already overburdened nurses, and it is an inconvenience to the patients themselves. Furthermore, it requires specialised staff to use it. Other writers suggest the use of the bispectral index (Reishtein, 2005), but again, that is an inconvenience to the patients, and specialised staff are needed to use it.

2.12.6 Consequences of Sleep Disturbance

The complex nature of sleep disturbance makes it hard to assess and alleviate. The very fact that the causes are multi-factorial and that it affects all the body systems makes it a challenging syndrome, and one which requires a multidisciplinary approach. Prolonged failure to experience effective sleep has detrimental effects on almost all body systems. It hinders the body's normal defence mechanisms, designed to deal with attack in the form of injury or illness, as well as diminishing cognitive capacity and emotional resilience (Friese, 2008). Sleep disruption can lead to agitation, and can also causes delirium (Kass, 2008), post-traumatic stress disorder, withdrawal symptoms (Franzen et al., 2007) and depression (Friese, 2008).

McQuire et al. (2000) contend that sleep deprivation is actually not the cause of delirium, but that it is delirium which causes sleep deprivation. More often than not, agitated and delirious patients are managed by the administration of large doses of

sedatives, whose metabolites can linger. Sleep deprivation can also reduce pain tolerance and increase fatigue on sympathetic nerve centres (Kass, 2008). This scenario, inadvertently, leads to an increased need for pain control thus using more drugs, that again contribute to sleep deprivation – and so, the cycle goes on. Lee et al.'s (2007), study of six older people, found that sleep deprivation also led to short-term memory loss.

Furthermore, sleep deprivation causes cognitive impairment, e.g. memory, language, and perception disturbances (Franzen et al., 2008), which can lead to post-traumatic stress disorder. Sleep deprivation increases sympathetic activity, which in turn leads to nocturnal high blood pressure (Parthasarathy & Tobin, 2004). Elevated serum catecholamines can result in arrhythmias, and the worsening of cardiac failure and consequently, death (Parthasarathy & Tobin, 2004). Inotropes and other cardiovascular drugs also cause dysrhythmias as side effects. Hence, more research is needed to find out whether or not dysrhythmias are more pronounced in patients with sleep disturbance. Sleep deprivation blunts chemoreceptor response, which reduces the respiratory system's ability to compensate for the respiratory loads during mechanical ventilation and after extubation (Pandharipande & Ely, 2006; Parthasarathy & Tobin, 2004). This leads to decreased hypercapnic and hypoxic ventilatory responsiveness, resulting in ineffective gas exchange (Honkus, 2003).

Lack of sleep has also been reported among the complications of sleep deprivation (Friese, 2008). Dysfunction of upper airway musculature leads to more respiratory problems, especially during weaning from ventilation and immediately after extubation (Honkus, 2003). Sleep deprivation in critically ill patients decreases killer cell and lymphocyte killer cell activity (Friese, 2008; Parthasarathy & Tobin,

2004; Honkus, 2003) by 50%, which can result in reduction of immunity in fighting and resisting infection, a delayed healing response, altered tissue repair and consequently, prolonged ICU and hospital stay (Friese, 2008; Honkus, 2003). Furthermore, Honkus' (2003) and Friese's (2008) findings indicate that the prolonged secretion of cortisol in sleep-deprived critically ill patients also contributes to reduced healing and makes patients susceptible to infection and delayed recovery. The literature also suggests that sleep deprivation augments a catabolic state, which affects the immune system and healing process (Friese, 2008; Kass, 2008; Honkus, 2003).

2.13 The Patient–Nurse Relationship

Nurse–patient interaction is central to providing nursing care. According to Johansson et al. (2005) nurse–patient relationships need to be personal and constructive (Johansson et al., 2005). In an acute care ward, the nurse–patient relationship can be affected by the ward environment (Smith, 1992; Gallant et al., 2002). A recent study in Canada found interactions between nurses and patients were less than two minutes in duration, during a 12-hour shift (Lotzkar & Bottorff, 2001). Factors such as heavy workloads, high patient dependency and increased use of technology created a situation of pressure for nurses, influencing their attitudes to patients and their families (McQueen, 2000). However, the nurse–patient relationship is not considered to be dependent on interactions of long duration. Altschul (1971), and Hagerty and Patusky (2003), supported this, and suggest that it is possible for nurse–patient relationships to be established within the shorter hospitalisations that patients currently experience.

The author has shown that patients hold expectations that the interactions they have with nurses will be respectful (Plaas, 2002). Cortis (2000) found this to be a similar expectation among culturally diverse patients. More specifically, in cases where nurses interact with culturally diverse patients, relations can be prone to language difficulties, which can have an impact on the involvement of patients in their nursing care (Cioffi, 2006). Hence, the nurse's level of involvement with culturally diverse patients can differ from patient to patient. Three specific levels of involvement in nurse-patient interactions have been identified by Ramos (1992). These levels of involvement are: instrumental, reflecting task orientation; protective, with an emotional component where the relationship is unilateral and nurse dominated; and reciprocal, with resolved control issues.

Reflected in the levels are varying degrees of connectedness between the nurse and the patient. Relationships are likely to remain at an instrumental level when the nurse is too busy to talk, and the patient is receiving social support from other sources (Cioffi, 2006). Both these factors can be present with culturally diverse patients in acute care wards. Only a limited number of studies have specifically investigated the perceptions of nurses and their patients within nurse-patient relationships. Findings show that perceptions between nurses and their patients differed on some aspects (Tilley et al., 1987; Camp, 1988). For example, nurses incorrectly assumed patient education was a desired outcome for their patients (Tilley et al., 1987). Nurses' documentation of pain descriptions were not always in agreement with those made by patients with cancer (Camp, 1988). The culturally diverse patient-nurse relationship has received little attention. Only one study was identified, and pertained to the context of community mental-health nursing practice (Osborne, 1995). No studies were located in relation to the acute care setting.

In England, about £10 billion is spent each year in staffing acute hospital units with nurses. Despite the amount of money spent, there is little evidence of its effectiveness and the situation is similar in other European, and Asian countries, and the US (Cioffi, 2006). However, there has been no nationally accepted system in the United Kingdom (UK) of determining the numbers and skill-mix of nurses required on acute wards. A review of acute hospitals' ward staffing reported that English NHS Trusts were unable to demonstrate a link between ward staffing and the quality of care delivered, and that outcome measures needed to be developed (Audit Commission, 2001). A subsequent review (Health Care Commission, 2005) noted improvement in the data available to measure the quality of care, but recommended further work to define appropriate indicators. Recently, a patient care portfolio with an acuity tool and nurse-sensitive indicators has been published (Association of UK University Hospitals, 2007). Rafferty et al.'s (2007) study confirmed the findings from the North American work by Aiken et al. (2002) and Needleman et al. (2002). In a study of 30 acute Trusts in England, involving nearly 4,000 nurses and over 118,000 general, orthopaedic and vascular surgery patients, findings indicate that deaths are higher when patients are cared for with "less favourable" nurse staffing (Rafferty et al., 2007).

A key element in the nurse-patient relationship is "held awareness". Held awareness enables nurses to recognise, and address, the risk of patient misunderstanding in the nurse-patient relationship. This enhances vigilance in the communication process between the nurse and the culturally diverse patient, and facilitates the sharing of responsibility (Cioffi, 2006). In patients with culturally diverse backgrounds, there is the continuous challenge of communication barriers and variable competency in

both oral and written English. Often the availability of interpreters for patients is limited, which presents a challenge for nurses in their goal of maintaining a face-to-face nurse–patient interaction; herein lies the potential not just for misunderstanding, but also for low levels of involvement, that impact on the nurse–patient relationship (Cioffi, 2006).

Although nurses and patients did share similar viewpoints within the dyad as identified in the descriptions, emphasis was often differently placed. There were also occasions where nurses did not share the same perspective as patients. This concurs with published findings (Altschul, 1971; Tilly et al., 1987; Camp, 1988). As the nurse–patient dyad is intrinsic to giving nursing care, collaboration and consensus between the nurse and their patient is essential for effective care (Cioffi, 2006).

The concept of the therapeutic nurse–patient relationship has also received a great deal of attention, particularly in the psychiatric nursing literature, ever since Hildegard Peplau’s book *Interpersonal Relations in Nursing* was first published in 1952. Traditionally, such a relationship is considered to be the essence of mental health nursing, and one which through its support brings about insight and behaviour change in the patient (Thelander, 1997; Peplau, 1988; Stuart, 2001; Fontaine, 2003). For a positive impact on patient’s health and wellbeing, this interactive and caring relationship is one where the nurse brings a positive approach and attitude to the patient, and nurtures the therapeutic interaction between them (Astedt-Kurki and Haggman-Laitila, 1992; Morse et al., 1994; Thelander, 1997; Beeber, 1998). This is a trusting relationship, where values are respected as the nurse listens to the patient’s concerns, provides information and advice, relieves

distress by encouraging the expression of emotion, improves morale through review of established outcomes and encourages the patient to practice self-help (Beebe, 1998; Morse et al., 1994; Stuart, 2001).

The relationship between nurses and patients was found to involve shared tensions, perceived differences and held awareness (Parker, 2004). Within these themes, nurses and patients addressed similar aspects of care in their reporting of this relationship. These aspects were: family and visiting, beliefs, communications, and information about their condition and its management. However, nurses and their patients did sometimes vary their focus within the aspects discussed, particularly with respect to visiting and beliefs (Parker, 2004).

Shared tensions between nurses and patients were evident. Family visiting and the gender of the carer were the main sources of tension for some patients (Parker, 2004). For example, Muslim patients noted their preference for unlimited visiting, their family's presence at their bedside, and for females to be attended to by females and males by males (Kleinman, et al., 2004). With regard to visitor access, nurses were charged with the responsibility of enforcing the visiting hours policy of the organisation, and considering the impact of visitors on other patients in the ward. This responsibility actively contributed to tension, confirming Parker's perception that tensions and ambiguities can emerge from nurses performing policing functions in their everyday work (Parker, 2004). The provision of personal care, such as help with showering by a same-gender carer, was less of an issue, as this request could usually be met within the existing staffing resources on acute care wards.

However, a female nurse giving patient education to a male was deemed to be a more difficult issue, with the nurse often having to give the wife the information, who then informed the patient. For some ethnicities, such as Asian, patients, the perception of racial discrimination was a source of tension in the nurse–patient relationship (Cioffi, 2006). Tensions in nurse–patient relationships can be potential pressure points for conflict. Their active management by nurses is essential. As part of this active management, nurses often engage bilingual health care workers in these situations, in order to diffuse issues (Cioffi, 2006).

Furthermore, culturally diverse patients and nurses identified perceptions of difference in terms of culture and specific beliefs – for example, the use of rituals. The focus on difference rather than similarity does not provide the nurse and patient with common ground on which to build a care-giving relationship, and might increase the effort and time required to do so (Cioffi, 2006). Although nurses need to appreciate perceived differences between themselves and their culturally diverse patients, the emphasis at an individual patient level should be on quickly establishing a common ground from which to build a relationship that is sensitive and respectful. This is particularly critical in acute care contexts, where heavy workloads, higher patient dependency and increasing technology can add to the stress of nursing, and where the care-giving relationship can be impeded (Cioffi, 2006). Cortis (2000) recommends that by staying as close as possible to the cultural values, norms and practices of the culturally diverse patient, cultural sensitivity can be achieved. Cognisance of these aspects can enable nurses to develop care-giving relationships that are personal and constructive (Lotzkar and Bottorff, 2001).

If the nurse–patient relationship develops well it can play a large part in sustaining the patient in the face of emotional difficulties. However, if the relationship becomes too close and intense, rather than being therapeutic, the patient may become overly dependent on the nurse and lose their self-reliance (Stuart, 2001). The patient should feel that they have the nurse’s attention and empathy. However, patients need to recognise that the relationship is professional and the purpose is for the nurse to provide objective advice to guide their wellbeing. The nurse–patient relationship that blurs the boundaries between professionalism and friendship is considered dysfunctional and unethical, and mental health nurses who become too involved with patients are unable to provide the opportunity for the patient’s growth and development (Stuart, 2001; Fontaine, 2003).

The development and maintenance of a therapeutic relationship is complex, especially when illnesses such as depression are involved. However, a confiding therapeutic relationship between patient and nurse is crucial in helping the depressed person see more clearly their withdrawal from life (Badger, 1996). Development of a therapeutic relationship is not easy in this situation, as depressive illness is known to impact on the development of such a relationship. Depressive mood symptoms affect the depressed person’s ability to function. Individuals possess a poor self-image and “feel they are ‘bad/useless/evil’ people” (Hosking, 1993). They experience a lack of motivation, and a feeling of worthlessness (Gotlib & Hammen, 1992; Kaplan & Sadock, 1995; Gelder et al., 2001). The depressed person may feel tired and listless, and withdraw from their usual activities, as energy is taken up with negative thoughts about worthlessness and lack of competence.

Individuals prone to depression may require a greater need for contact with, and emotional support from, others (Gotlib & Hammen, 1992). Social assistance may be difficult to achieve, as the characteristics displayed by depressed people may make it difficult for sufferers to gain contact and support from others. For example, depressed people feel cut off from others, and as they do not feel understood, they isolate themselves further from people (Kaplan & Sadock, 1995; Karp, 1994). Feldman and Gotlib (1993) also report that interactions with depressed people leave those around them feeling negative. This has implications for health professionals working with depressed people. They are more likely to want to avoid contact with depressed patients, as it has been reported that people acknowledge experiencing depression and hostility after conversing with depressed people (Strack & Coyne, 1983; Gotlib & Beatty, 1985). The depressed person is particularly vulnerable to the development of a therapeutic relationship, and also limits opportunity for this development, as they usually display a reduction in verbal output and fear open communication and disclosure (Gelder et al., 2001).

Although the nursing literature contends that the therapeutic nurse–patient relationship has benefits for both the patient and nurse, concern about whether nurses interact with patients in a therapeutic manner has been raised (Martin, 1992; Kerr, 1996; Muller & Poggenpoel, 1996; Robinson, 1996; Cleary et al., 1999). Moyle (2003) in his study argues that while the nursing profession, and in particular mental health nurses, acknowledge the therapeutic relationship, doubt is raised about whether the ideals of such a relationship do actually occur consistently and effortlessly in practice. Doubt is also raised about the potential of the nurse–patient relationship to guide and support the care of vulnerable patients with special needs, such as the depressed. Findings from a study of the nurture of depressed people is

used to argue that the therapeutic relationship does not come instinctively to nurses, and that greater attention to establishing a therapeutic nurse–patient relationship is required.

2.14 Nurses Today

The nursing profession is currently experiencing a severe nursing shortage. With a large cohort of nurses about to retire, every effort must be made to retain nurses currently within the system and to ensure that nursing work environments are attractive to newcomers to the profession (Kanerva et al., 2010). High-quality patient care depends on a nursing workforce that is empowered to provide care according to professional nursing standards. Numerous studies have shown that work environments that support professional nursing practice result in more positive outcomes for both nurses and patients (Aiken et al., 1994). Current nursing work environments are characterised by heavy workloads, and considerable stress among nurses. Nurses report high levels of burnout and illness-related absenteeism (Laschinger et al., 2004a; Cho et al., 2006; Greco et al., 2006). This situation threatens the well-being of nurses themselves, their patients and their employing organisations. The future of professional nursing depends on finding ways to create high-quality work environments that retain both experienced nurses and new graduates (Laschinger et al., 2009).

The nursing shortage and reduced quantities of newly trained nurses, have added to the difficulty of employing sufficient numbers of nurses experienced by health care organisations (Morgan and Lynn, 2009). A shortage of nurses impacts on the concerns of nurses, specifically the inability to meet the needs of their patients, and the possibility of a nursing workforce insufficiently skilled, oriented and

experienced to meet the needs of patients. Further, the shortage equation (shortage = lack of staff or shortage = lack of sufficiently educated staff) is not static. Both the number of nursing staff needed in any given setting, and what the patients need in that setting can, and do, change instantaneously. While being short of staff has a host of aetiologies, it influences the daily working conditions of nurses. Similarly, it places nurses under severe time and energy constraints. Nurses' comprehension of who is responsible for recruitment problems and nurse education and training issues, also impacts on how they deal with the resulting problems. Nurses' attribution for the shortage is generally put down to one or more of the following factors (Morgan and Lynn, 2009):

- Too few nurses available;
- Economic decisions made by administration to cut nurses and nursing positions because they were easy targets;
- Lack of adequate training and/or orientation of nurses working on the floor;
- Inadequate measurement of patient acuity;
- Inadequate skills mix of unit staff;
- Inadequate support staff to do the essential non-nursing tasks.

Nurses' understanding of the shortage provides a starting point from which to investigate how the shortage context interacts with nurses' perceptions of what they find satisfying and unsatisfying about their work (Morgan and Lynn, 2009).

This lack of resource adequacy in both staffing and the environment is a major dissatisfier. As described above, nurses feel that opportunities to engage in humanised care work, comforting, educating, making a difference and advocating for the patient, are being systematically eroded from their jobs as their work shifts to

accommodate the shortage. The need to be able to undertake humanised care work lies at the heart of whether nurses feel that they have a satisfying professional position (Morgan and Lynn, 2009).

With many nurses nearing retirement and fewer individuals entering the profession, nursing is experiencing a critical workforce shortage (Keenan, 2003). Thus, it is critical that nursing work environments are structured in ways that ensure that nurses feel engaged in their work, and want to remain in their jobs. According to the World Health Organisation (2006), there is a shortage of 4.3 million health care workers worldwide, which is expected to increase by 20% in the next two decades. The shortage is particularly acute in the nursing profession, which is the largest group of health professionals in hospital settings (McMullin & Cooke, 2004). A major cause of turnover among nurses is related to dissatisfaction in the workplace (Hayes et al., 2006).

Within the UK, the ability of the state to identify a crisis in the NHS, establish a prescription for change and ensure effective implementation, is a prerequisite for the recruitment of nurses internationally (Bach, 2010). International recruitment has been facilitated by immigration rules that classify nursing as a shortage occupation, facilitating access to the UK labour market and signalling that the UK is actively seeking overseas nurses. The Department of Health's support for international recruitment reflected a broad relaxation of immigration policy under the Labour administration, with an increased allocation of work permits and the introduction of new programmes for highly skilled migrants (Hatton, 2005).

The NHS Plan (DH, 2000) highlighted a series of underlying problems, which required workforce growth, accompanied by a commitment to unprecedented NHS investment. The Labour government cultivated the support of employers and trade unions, and the preface of the NHS Plan included their signed endorsement. They pledged their commitment to work with the government “in modernising the NHS and ensuring change” (Department of Health Plan, 2000, p. 6). This mirrored Howell’s (2005) argument that the state’s interpretation of crisis steers key stakeholders towards acceptance of the state’s preferred solution. The main stimulus to the expansion of the nursing workforce arose directly from the Labour government’s commitment to a target of an additional 20,000 nurse posts by 2004 in England, which was subsequently revised to 35,000 additional nurse posts by 2008 (DH, 2002, p. 15). A Department of Health respondent explained that the NHS Plan focused attention on international recruitment because of the delay in bringing UK-trained nurses into employment:

Trade unions are important stakeholders within the NHS and have influenced state policy. The two main trade unions that recruit nurses are the Royal College of Nursing (RCN), and Unison. They have distinctive but overlapping membership strategies (Bach and Givan, 2004). Both the RCN and Unison have sought to increase their membership by recruiting overseas nurses, often using low subscription rates to encourage membership. They also provide support, often working in collaboration with community organisations and nurse associations from source countries, to increase their credibility with migrant communities. Key informants suggest it has been important to ensure that the role of trade unions in the UK is understood, because their functions and approach differ substantially from their role in some source countries. This difference can act as a barrier to trade

union membership (Crisp, 2007). An apparent challenge is that overworked branch officials may perceive migrant workers as being resource-intensive to service, as they bring unfamiliar problems (e.g. in relation to immigration law) that branch officials are ill-equipped to address (Bach, 2010).

Trade union research on the experience of migrant health workers highlights the difficulties faced in terms of gaining respect and promotion (Pike and Ball, 2006; Unison, 2009a). In a tight labour market and with national pay determination, overseas nurses were felt to pose little threat to terms and conditions, in comparison with low skill migrants employed in unregulated sectors. International recruitment has helped to alleviate workload pressures, particularly as RCN members were concerned about staff shortages, and workload pressures, and their consequences on patient care (RCN, 2007). Nonetheless, trade unions have expressed reservations about international recruitment being used as a short-term response to reductions in nurse training and unattractive working conditions (Unison, 2004).

The RCN and Unison have also been concerned with ensuring that international recruitment does not worsen staff shortages in source countries, and have put pressure on the Department of Health to strengthen its ethical recruitment guidelines to include private sector recruitment agencies and independent health care sector providers. Strengthened government guidelines were published in 2001 and 2004 (DH 2001; 2004), highlighting the capacity of trade unions to modify state policy.

The substantial growth in staffing was made possible by international recruitment, and was underpinned by unprecedented increases in NHS expenditure. Between 1998 and 2008, the overall nurse headcount in England increased by 26%, from 323,457 to 408,160 (Information Centre, 2009). Most of this growth, however,

occurred up to 2005, and was followed by a period of stabilisation and subsequent decline. Around 2005, priorities started to shift from staff growth to curbing staff expenditure. Achieving financial balance was deemed to be important for trust managers that were seeking to gain foundation status, and for all trusts, the re-introduction of competition was linked to payment by results, that required renewed efforts to reduce unit costs (Health Committee, 2006). These trends were reinforced by the economic crisis. In the short term, NHS expenditure has been relatively protected, but trusts are retrenched in the anticipation of real reductions in funding and expected staff reductions (NHS Confederation, 2009).

The government has always recognised that international recruitment would be especially important while domestic nurse training provision was being increased. Between 1999 and 2005, the number of domestic nurse training places expanded rapidly, from around 17,700 per annum to 23,650 per annum - an increase of a third (Health Committee, 2007). This expansion reflected a growing belief within the DH that by 2006, the NHS would be “largely self-sufficient”, and any shortfall in nurse staffing could be addressed by “health workers from East Europe” (Crisp, 2007). This altered policy context reflected wider public policy considerations. The government was very sensitive to accusations that it was poaching nurses from less developed countries and exacerbating shortages of health professionals, leading it to adopt ethical recruitment codes (DH, 2001, 2004).

Changes in licensing requirements have made it more difficult for overseas nurses to gain registration. The state has an indirect influence over occupational licensing requirements, with authority delegated to the Nursing and Midwifery Council (NMC) (Bach, 2007). In 2005, the NMC fundamentally altered its education

requirements, requiring all overseas nurses to undertake 20 days of NHS protected learning, and, if required, a period of supervised practice. This change not only increased the cost of registration, but meant that there were shortfalls in the number of places available. The NMC also adopted the International English Language Testing System (IELTS), and from February 2007, the IELTS score required was raised to 7.0 (NMC, 2007), further discouraging overseas nurses. The impact was illustrated in the Quality Assurance Agency (QAA) report on the demand for ONP courses at the University of Sunderland, which had entered into partnership with nursing colleges in India. Since 2007, no overseas nurse students have been recruited, “the raising of the entry requirements for the ONP having triggered a collapse in recruitment” (QAA, 2009). The QAA suggests that nurses may be able to obtain work more easily in Australia or the US because English language requirements are often less stringent.

Finally, the state has had a crucial role in establishing immigration policy. Significant shifts in immigration rules have occurred, which culminated in the introduction of the points-based system (PBS) in 2008 (Home Office, 2006). Prior to the PBS, an important change occurred in July 2006, when the government gave six weeks’ notice that it was removing general nurses (Band 5 and 6) from the government’s shortage occupation list (DH, 2006). Band 5 covers staff nurses, often newly qualified, to more experienced, Band 6, nurses. This meant that an employer would have to demonstrate that they had advertised the vacancy and been unable to recruit a suitable UK or EEA applicant before applying to the Home Office for a work permit.

This innocuous sounding change had major implications for overseas nurses, reflected in a strongly worded letter from the RCN General Secretary to the Minister for Immigration:

We are particularly concerned about the evidence base for this decision, the lack of consultation and timescales for its implementation . . . We also fear that this decision will have a negative impact on existing work permit holders who have already worked in the UK for some time but will now find it hard to change employer . . . The RCN immigration office has taken hundreds of calls from international nurses who are studying in the UK, who now fear that they will be unable to get work permits [Malone, 2006].

The government did not alter its policy, and in autumn 2006, a few months after this change, an RCN officer summarised the consequences as: “putting down the barriers, closing the gates, bye bye internationally recruited nurses”. An important consequence of this change was an increased sense of vulnerability that applied especially to nurses working in care homes, generally acknowledged as less favourable employers than NHS trusts (Bach, 2010). Trade union officials cited examples of nurses working in care homes that have been subject to sexual harassment but who have been reluctant to involve trade unions because of concerns that they might lose their jobs, and consequently their right to remain in the UK (Bach, 2010).

These changes in immigration rules prefigured more systemic changes in 2008, with the introduction of the points-based system (PBS). Nurses are categorised as skill tier 2 workers, with entry dependent on a job offer. Employers seeking to use tier 2 migrants must prove that they cannot fill the post with a resident worker, unless the

job is included in the shortage occupation list (Border Agency, 2008a). The government created the Migration Advisory Committee (MAC) to compile this list, and to advise government on skilled, shortage occupations where it is “sensible” that migration plays a role in filling job vacancies (MAC, 2008). Detailed codes of practice are available to employers, which are updated regularly, to gauge if migrants have the qualifications and prospective earnings to qualify for tier 2 status (Table 1).

The establishment of the Migration Advisory Committee (MAC) exemplifies Howell’s (2005) argument that the state has a unique capacity to construct new institutions to manage crisis; the unprecedented scale of immigration has certainly created considerable public disquiet (Somerville, 2007). Since its establishment in 2007, the MAC has rapidly established itself as a key institution, and its more restrictive shortage occupation list has significantly reduced access to the UK labour market (Border Agency, 2008b). The MAC has drawn on stakeholder evidence, undertaking visits to employers, and conducted analysis of the labour market. Its shortage recommendations are based on demonstrating that an occupation is skilled, then establishing whether a shortage exists and how far it is sensible to use migrant labour to fill any shortage. The MAC Chairman recognised that “the whole notion of shortages is a bit of a slippery concept” (House of Lords, 2008b: 373), and the MAC acknowledged that the “sensible” criteria “can be interpreted in many different ways” (MAC, 2008). The government has accepted MAC recommendations, and stakeholders have expressed support for its approach (Home Affairs Committee, 2009). The MAC has enhanced the credibility of government immigration policy, and its adoption of criteria that are open to interpretation has

enabled it to make recommendations that reinforce government objectives (MAC, 2009b).

2.15 Clinical Guidelines

Over the past decade, clinical guidelines have increasingly become a familiar part of clinical practice. Every day, clinical decisions at the bedside, rules of operation at hospitals and clinics, and health spending by governments and insurers are being influenced by guidelines. As defined by the Institute of Medicine, clinical guidelines are “systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances” (Field & Lohr, 1990). They may offer concise instructions on which diagnostic or screening tests to order, how to provide medical or surgical services, how long patients should stay in hospital, or other details of clinical practice.

At the beginning of the 21st century, diagnosis and treatment are being based on research-derived evidence rather than on clinical skills and experience (Thomas, et al., 2009). Medical guidelines are based on randomised clinical trials and systemic reviews (Arii, 2007). Guidelines are a milestone in modern medical science. They represent a scaffold for the unification and standardisation of medical treatments and procedures for diagnosis (Recupero, 2008). Although not a guarantee, an institutional guideline enhances the possibility and the right of patients to have equal access to health care, the latter being a mandatory clause in the constitutions of most countries (Darlenski et al., 2010).

Poor definitions or imprecise standards for procedures, or both, may result in divergent research conclusions and incompatibilities in treatment practices, as has

been shown in the control of severe or difficult-to-treat asthma (Campbell et al., 2008). Hence, there is a growing demand for standardisation not only of medical terms and definitions, but also for diagnostic and therapeutic procedures and nursing interventions (Vlaanderen et al., 2008). In addition, the application of guidelines can be beneficial for the quantitative risk assessment in human observational studies (Vlaanderen et al., 2008).

The broad interest in clinical guidelines that is stretching across Europe, North America, Australia, New Zealand, and Africa (Box 2.1) has its origin in issues that most health care systems face. Rising health care costs are fuelled by increased demand for care, more expensive technologies, and ageing populations, along with variations in service delivery among providers, hospitals, and geographical regions and the presumption that at least some of this variation stems from inappropriate care, with either the overuse or underuse of services. This impacts on the intrinsic desire of health care professionals to offer, and for patients to receive, the best care possible. Clinicians, policymakers, and payers see guidelines as a tool for making care more consistent and efficient and for closing the gap between what clinicians do and what scientific evidence supports (Darlenski et al., 2010).

In the United Kingdom, clinical guidelines were launched in the NHS Plan (Department of Health, 2000), a policy which marked a commitment to extra funding for the National Health Service (NHS) in England in return for reform of working practices. After the Labour government was elected in 1997, the total NHS budget trebled to around £90 billion per year (Department of Health, 2008, p. 118). The NHS Plan stated that by 2004, the majority of NHS staff would be “working under agreed protocols and guidelines identifying how common conditions should

be handled and which staff can best handle them” and, that the NHS Modernisation Agency “will lead a major drive to ensure that protocol-based care takes hold throughout the NHS” (Department of Health, 2000, p. 83). Two years later, the NHS Modernisation Agency (MA) and National Institute for Clinical Excellence (NICE) produced a 12-step guide for developing and implementing such protocols (MA/NICE, 2002). From the 137 published clinical guidelines within the NICE, 64 results related to cardiovascular clinical guidelines, and only one to patients who were acutely ill in hospital (Appendix K). The recommendations which emerged from the “Acutely Ill Patients in Hospital” guidelines were related mainly to cost effectiveness issues (Appendix L).

Iliot et al.’s (2010) article was one of the first systematic literature reviews of the development, implementation and audit of clinical guidelines in the UK. Although the term “protocol-based care” may be unfamiliar, it refers to well-established ways of working in many countries, and guidelines in other countries (Iliot et al., 2010). This is because protocol-based care is a generic term for the use of documents that formalise working practices by making explicit “who should do what, when, how and why”. There are many terms for such documents, including algorithms, protocols, integrated care pathways, clinical guidelines, care bundles, procedures and policies. Standardisation is at the heart of protocol-based care (Patterson et al., 2008). All these documents share the same purpose, which is to set standards and to standardise care to reduce unacceptable variations in health care practice and patient outcomes (Iliot et al., 2006). Standardised approaches to care are common in nursing and midwifery. Bail et al. (2009) describe how nursing procedural policies emerged in the late 19th century, commenting that, “nursing work was often codified in hospital policies or standards” (p. 1458).

For Iliot et al. (2010), a systematic literature review was challenging because of the ambiguity of the concept and limited literature. “Protocol-based care” was a rarely used term in the literature. Most of the papers were not research papers, and so were categorised as “practitioner knowledge” (Hunter & Segrott, 2008). As a consequence, the review team had to adopt a flexible, exploratory and reflective approach to the conceptual ambiguity and the paucity of research studies. The ambiguous and interchangeable terminologies associated with protocol-based care meant that identifying potentially relevant literature was difficult. In March 2005, a search of 20 electronic databases using the term “protocol-based care” produced only 56 references, and most of these related to policies in the health care system in England (Iliot et al., 2010). The search terms were expanded to include protocols, guidelines, pathways and integrated care pathways, but since then new ways of formalising care have been introduced, such as care bundles, which are being promoted by the Department of Health as high impact intervention tools (Department of Health, 2007). Just over a quarter (33/177) of the included papers about guidelines in the United Kingdom were appraised in detail.

Most of the 33 papers were small scale, descriptive studies, containing practitioner knowledge that was unique to a particular place, time and people. They presented a positive, rather than a critical or reflective, viewpoint on their experience of clinical guidelines. Most authors assumed that clinical guidelines would improve the quality and efficiency of patient care. Many were practice-led initiatives that occurred in isolation from each other, and from strategic efforts to encourage evidence-based care, and did not refer to any theoretical perspectives, such as change management or innovation. This limited the comparative analysis and brings into question the

transferability of the findings, as the development process seemed to be influenced by situation specific factors (Department of Health, 2007). Many papers were not, and did not purport to be, research-based, and so were not appraised as such because it was considered to be unfair to use an inappropriate criterion (Iliot et al., 2010) Less than a third (10/33) contained any data derived from a recognised research method, and the other papers contained audit results and/or descriptions of local protocol-based care development. It was decided not to categorise these papers as single site, single method case studies, even though they gave contextual details and specific descriptions of practice, because this was judged to be an unfair imposition. The papers were not intended to be research papers, and therefore could not be expected to meet the quality criteria for case studies. However, an innovative approach to data synthesis, using an inductive and deductive approach, allowed patterns to emerge and new insights to be gleaned from the 33 studies.

The distribution of guidelines is often not enough to change the behaviour of health care professionals. More effort is needed to implement clinical guidelines into practice. However, which factors do influence implementation either in a positive or a negative way is not clear yet, especially regarding clinical guidelines for nurses or Certified Nurse Assistants (CNAs). Francke et al. (2008) analysed current literature reviews on factors influencing the use of clinical guidelines in the UK. The main conclusion was that the evidence base is still thin, particularly as far as the implementation of nursing clinical guidelines is concerned. Francke's et al.'s (2008) meta-literature review of points to environmental characteristics (e.g. support from peers or superiors), characteristics of professionals (e.g. familiarity with the clinical guidelines' content), patient characteristics (e.g. co-morbidity) and clinical guideline characteristics as all influencing the likelihood that clinical guidelines are followed.

Additionally, implementation strategies with multiple components, e.g. training combined with feedback on the work floor, could be more effective than only one strategy. However, as stated above, the evidence base is still scarce, particularly with regard to guidelines for nursing staff.

As clinical guidelines diffuse into medicine, there are important lessons to be learnt from the first hand experience of those who develop, evaluate, and use them (Field & Lohr, 1992). The Field and Lohr (1992) article was the first of a four part series to reflect on these lessons, and examined the potential benefits, limitations, and harmful effects of clinical guidelines. Their future articles will review lessons learnt about their development (Shekelle et al., in press), legal and emotional ramifications (Hurwitz et al., in press) and finally, their implementation (Feder et al., in press).

The principal benefit of clinical guidelines is to improve the quality of care received by patients. Although it has been shown in rigorous evaluations that practising clinical guidelines can improve the quality of patient care (Zuberbier et al., 2006), whether they achieve this in daily practice is less clear. This is partly because patients, physicians, and managers define quality differently, and because current evidence about the effectiveness of clinical guidelines is incomplete (Zuberbier et al., 2006).

2.1 Box: The Overview of International Activity on Clinical Guidelines

The following is an overview of international activity on clinical guidelines (Zuberbier et al., 2006):

Europe

United Kingdom Clinical guidelines have existed in England for decades; recent years have heightened interest in clinical guidelines as a tool for implementing health care based on proof of effectiveness. Professional bodies, encouraged by the NHS, are producing clinical guidelines for use by providers to improve care and by purchasers to guide contracting and commissioning decisions. The NHS is now using a critical appraisal instrument to determine which clinical guidelines to commend to health authorities. Although historically most British clinical guidelines have derived from consensus conferences or expert opinion, there is growing interest in using explicit methods to develop evidence-based guidelines. The Scottish Intercollegiate Guideline Network uses a systematic multidisciplinary approach to prepare evidence based clinical guidelines. National clinical guidelines are converted at the local level into formats that encourage adoption in practice.

The Netherlands In the Netherlands, the Dutch College of General Practitioners has produced guidelines since 1987, issuing more than 70 clinical guidelines at a rate of 8–10 topics per year. A rigorous procedure involves an analysis of the scientific literature, combined with consensus discussions among ordinary general practitioners and content experts. A systematic implementation programme follows guideline development. Updating of the clinical guidelines has recently begun. Guidelines figure prominently in Dutch health policy.

Finland and Sweden In Finland, national and local bodies have issued more than 700 clinical guidelines since 1989. A programme for evidence-based guidelines development has been started recently. Guidelines in Sweden appear in reports by the Swedish Council on Technology Assessment in Health Care, an internationally consulted technology assessment agency, and in recommendations from other government bodies.

France In France, the Agence Nationale de l'Accréditation et d'Évaluation en Santé has published over 100 clinical guidelines based on consensus conferences or modified clinical guidelines from other countries. It has also developed more than 140 références médicales, guidelines on procedural indications for use in setting

coverage policy. The guidelines are disseminated through networks of general practitioners, and their effectiveness is evaluated through local audits.

Germany, Italy, and Spain Clinical guidelines are on the rise in Germany and Italy, where a clinical guidelines database is being developed to support national health care reform. In Spain, the Catalan Agency for Health Technology Assessment has begun preparing clinical guidelines and teaches methods of clinical guideline development. Consensus clinical guidelines figure prominently in Catalonian health care reform.

North America Clinical guidelines, protocols, and care pathways developed by professional societies and other groups are common in American hospitals and health plans, where they are used for quality improvement and cost control. Although some evidence-based clinical guidelines produced by government panels and medical societies have received prominent attention, many health care organisations purchase commercially produced guidelines that emphasise shortened lengths of stay and other resource savings. Canadian health care is largely state funded, but a similar proportion of organisations as in the United States use clinical guidelines. The massive clinical guidelines industry in America has created special problems, such as information overload. Directories and newsletters have become necessary to monitor the hundreds of clinical guideline topics and sponsoring organisations. Americans have articulated evidence-based methods in manuals and other reports. This expertise has not always found its way into actual clinical guidelines-most of which remains rooted in consensus or opinion.

Australia and New Zealand Clinical guidelines in Australia date to the late 1970s, when the state health authority began endorsing guideline booklets, 2 and they continue on a large scale today. There is an increasing emphasis on the need for evidence-based methods. Clinical guidelines in New Zealand emanate directly from national health policy. New Zealand's choosing to restrict services at the point of service through clinical guidelines received international attention in debates about rationing. One clinical guideline on hypertension and a subsequent cholesterol guideline from the New Zealand National Heart Foundation broke new ground methodologically by linking recommendations to patients' absolute risk probabilities rather than to generic treatment criteria.

2.15.1 Benefits of Clinical Guidelines

A. Potential Benefits for Patients

For patients (and almost everyone else in health care), the greatest benefit that could be achieved by guidelines is the improving of health outcomes. Clinical guidelines that promote interventions of proven benefit and discourage ineffective ones have the potential to reduce morbidity and mortality and improve quality of life, at least for some conditions (Bigby, 2000). Clinical guidelines can also improve the consistency of care; studies around the world show that the frequency with which procedures are performed varies dramatically among doctors, specialties, and geographical regions, even after case mix is controlled for (evidence-based medical guidelines) (Bigby, 2000). Patients with identical clinical problems receive different care, depending on their clinician, hospital, or location. Clinical guidelines offer a remedy, making it more likely that the patient will be cared for in the same manner regardless of where or by whom they are treated (Bigby, 2000).

Clinical guidelines offer patients other benefits. Those accompanied by “consumer” versions (leaflets, audiotapes, or videos, in lay language) or publicised in magazines, news reports, and Internet sites, inform patients and the public about what their clinicians should be doing (Darlenki et al., 2010). Increasingly, lay clinical guidelines summarise the benefits and potential harmful effects of available options, along with estimates of the probability or magnitude of potential outcomes (US National Library of Medicine). Such clinical guidelines empower patients to make more informed health care choices and to consider their personal needs and preferences in selecting the best option. Indeed, clinicians may first learn about new clinical guidelines (or be reminded of oversights) when patients ask about recommendations or treatment options.

Finally, clinical guidelines can help patients by influencing public policy (Arii, 2007). Clinical guidelines call attention to under-recognised health problems, clinical services, and preventive interventions, and to neglected patient populations and high risk groups. Services that were not previously offered to patients may be made available as a response to newly released guidelines (Arri, 2007). Clinical guidelines developed with attention to the public good can promote distributive justice, advocating better delivery of services to those in need. In cash-limited health care systems, clinical guidelines that improve the efficiency of health care, freeing up resources needed for other (more equitably distributed) health care services (Bigby, 2000).

B. Potential Benefits for Health Care Professionals

Clinical guidelines can improve the quality of clinical decisions. They offer explicit recommendations for clinicians, who are uncertain about how to proceed, overturn the beliefs of physicians accustomed to outdated practices, improve the consistency of care, and provide authoritative recommendations that reassure practitioners about the appropriateness of their treatment policies (Darlenski et al., 2010). Clinical guidelines based on a critical appraisal of scientific evidence (evidence-based guidelines) clarify which interventions are of proven benefit, and document the quality of the supporting data. They alert clinicians to interventions unsupported by good science, reinforce the importance and methods of critical appraisal, and call attention to ineffective, dangerous, and wasteful practices, thus enhancing the quality of patients' care.

The first step in designing quality assessment tools (standing orders, reminder systems, critical care pathways, algorithms, audits, etc.) is to reach agreement on

how patients should be treated, usually by developing a guideline. Clinical guidelines are a common point of reference for prospective and retrospective audits of clinicians' or hospitals' practices: the tests, treatments, and treatment goals recommended in guidelines provide ready process measures (review criteria) for rating compliance with best care practices (Campbell et al., 2008).

Medical researchers benefit from the spotlight that evidence-based guidelines shine on gaps in the evidence. The methods of guideline development that emphasise systematic reviews focus attention on key research questions that must be answered to establish the effectiveness of an intervention (Vlaanderen et al., 2008) and highlight gaps in the known literature. Critical appraisal of the evidence identifies design flaws in existing studies. Recognising the presence and absence of evidence can redirect the work of investigators and encourage funding agencies to support studies that fulfil this effectiveness-based agenda. Finally, some uses of clinical guidelines straddle the boundary between benefits and harms. Clinicians may seek secular (and even self-serving) benefits from clinical guidelines. In some health care systems, clinical guidelines prompt government or private payers to provide coverage or to reimburse physicians for services (Vlaanderen et al., 2008). Specialties engaged in "turf wars" to gain ownership over specific procedures or treatments may publish a clinical guideline to affirm their role. Clinicians may turn to guidelines for medico-legal protection or to reinforce their position in dealing with administrators who disagree with their practice policies (Vlaanderen et al., 2008).

One of the biggest advantages of clinical guidelines is the prevention of potential diagnostic and therapeutic mistakes, especially at the hands of young health care

practitioner specialists. At the beginning of their clinical practice, physicians often allow mistakes to slip in due to their limited experience (Andrews & Redmond, 2004). A clinical guidelines-based practice provides a means to diminish errors. Clinical guidelines are a framework for inexperienced and unqualified physicians, but a clinical guideline can never replace the authority of medical education and clinical practice. Clinical guidelines are increasingly used in patient management (Andrews & Redmond, 2004). A lot of progress has undoubtedly been achieved since clinical guidelines were first introduced in medical practice. They have been developed in accordance with a strictly established set of principles and procedures (Seebacher & Korting, 2007). Thus, peer-reviewed and reliable information is reaching the everyday medical practitioner. Health care professionals can use clinical guidelines only if fundamental knowledge and practical experience are present as pre-existing conditions.

The development of clinical guidelines gives physicians the opportunity to discover and implement scientific knowledge in their routine clinical practice, thus guaranteeing their patients have open access to medical achievements (Arii, 2007). More specifically, clinical guidelines-driven results can increase the confidence of practising coronary care physicians in sharing their experience with other qualified specialists, with different economic and medical backgrounds, in other countries (Bores, 2007). This often provides opportunities for learning and sharing gold standard scientific and practical medical standards, thus improving patient care.

The development of guidelines offers a basis for dialogue and consensus of opinion among coronary care specialists from different countries (Bores, 2007). In this way, physicians are able to share personal experiences of working with patients from

different nationalities and backgrounds, and of differing genetic pools. This improves the chances of understanding the essence of diseases. Elaboration of guidelines provides a ground for professionals from different specialties to share their knowledge and points of view in particular problem-solving discussions (Bores, 2007).

Medical guidelines are easily accessible and ready to use. After the computerised primary care guidelines included in the Physician's Desk Reference and Database were introduced in Finland in 1989 (Jousimaa et al., 1998), a survey amongst practicing physicians revealed that each user made from one to 10 searches daily, with an average time of four to nine minutes for the finding and reading of an article. Physicians found the requested information in nearly 90% of cases, and, in particular, dermatology was the most popular field to be researched in this way (Jousimaa et al., 1998; Makela & Kunnamo, 2001). In addition, patients are reassured when a physician refers to a database when searching for the treatment options for their condition (Makela & Kunnamo, 2001).

Clinical practice guidelines are often used as a reference in malpractice judicial issues (Recupero, 2008; Moses & Feld, 2008). They are generally developed by medical societies, with the primary intention of highlighting the effectiveness of a defined procedure or treatment, and improving outcomes. Sticking to scientifically based and evidenced standards is intended to protect the medical practitioner and the patient from malpractice. Physicians should be aware of the legal use of clinical guidelines because, for instance, some guidelines include a disclaimer that they are not intended and devised for the arena of the malpractice court (Moses & Feld, 2008).

C. Potential Benefits for Health Care Systems

Health care systems that provide services, and government bodies and private insurers that pay for them, have found that clinical guidelines may be effective in improving efficiency (often by standardising care) and optimising value for money (Seebacher & Korting, 2007). Implementation of certain clinical guidelines reduces outlays for hospitalisation, prescription drugs, surgery, and other procedures. Publicising adherence to clinical guidelines may also improve the public image of a health care institution, sending messages of commitment to excellence and quality. Such messages can promote good will, political support, and in some health care systems, revenue. Many believe that the economic motive behind clinical guidelines is the principal reason for their popularity.

2.15.2 Potential Limitations and Harms of Clinical Guidelines

The most important limitation of clinical guidelines is that the recommendations may be wrong (or at least, wrong for individual patients) (Jousimaa et al., 1998). Apart from human considerations such as inadvertent oversights by busy members of the clinical guidelines group, clinical guideline developers may err in determining what is best for patients for three important reasons.

Firstly, scientific evidence about what to recommend is often lacking, misleading, or misinterpreted (Jousimaa et al., 1998). Only a small subset of what is practised in medicine has been tested in appropriate, well-designed studies. Where studies do exist, the findings may be misleading because of design flaws which contribute to bias or poor generalisability. Guideline development groups often lack the time, resources and skills to gather and scrutinise every last piece of evidence. Even when

the data are certain, recommendations for or against interventions will involve subjective value judgements when the benefits are weighed against the harms. The value judgement made by a guideline development group may be the wrong choice for individual patients (Seebacher & Korting, 2007).

Secondly, recommendations are influenced by the opinions and clinical experience and composition of the guideline development group. Medical tests and treatments that experts believe are good for patients may in practice be inferior to other options, ineffective, or even harmful (Seebacher & Korting, 2007). The beliefs to which experts subscribe, often in the face of conflicting data, can be based on misconceptions and personal recollections that misrepresent population norms (Jousimaa et al., 1998).

Thirdly, patients' needs may not be the only priority in making recommendations. Practices that are suboptimal from the patient's perspective may be recommended to help control costs, serve societal needs, or protect special interests (those of doctors, risk managers, or politicians, for example). The promotion of flawed clinical guidelines by practices, payers, or health care systems, can encourage, if not institutionalise, the delivery of ineffective, harmful, or wasteful interventions. The same parties that stand to benefit from clinical guidelines patients, health care professionals, and the health care system may all be harmed (Seebacher & Korting, 2007).

A. Potential Harms to Patients

The greatest danger of flawed clinical guidelines is to patients. Recommendations that do not take due account of the evidence can result in suboptimal, ineffective, or

harmful practices (Makela & Kunnamo, 2001). Guidelines that are inflexible can harm by leaving insufficient room for clinicians to tailor care to patients' personal circumstances and medical history. What is best for patients overall, as recommended in guidelines, may be inappropriate for individuals; blanket recommendations, rather than a menu of options or recommendations for shared decision-making, ignore patients' preferences (Makela & Kunnamo, 2001). Thus, the frequently touted benefit of clinical guidelines as promoting more consistent practice patterns and reduced variation may come at the expense of reducing individualised care for patients with particular needs (Darlenski et al., 2010).

Lay versions of clinical guidelines, if improperly constructed and worded, may mislead or confuse patients and disrupt the physician–patient relationship. Clinical guidelines can adversely affect public policy for patients (Darlenski, et al., 2010). Recommendations against an intervention may lead providers to drop access to, or coverage for, services. Imprudent recommendations for costly interventions may displace limited resources that are needed for other services of greater value to patients. The tendency of clinical guidelines to focus attention on specific health issues is subject to misuse by proponents and advocacy groups, giving the public (and health professionals) the wrong impression about the relative importance of diseases and the effectiveness of interventions (Zuberbier et al., 2006).

B. Potential Harms to Health Care Professionals

Flawed clinical guidelines harm practitioners through clinical advice, thereby compromising the quality of care. They may encourage ineffective, harmful, or wasteful interventions. Even when guidelines are correct, clinicians often find them inconvenient and time-consuming to use. Conflicting guidelines from different professional bodies can also confuse and frustrate practitioners (Recupero, 2008). Outdated recommendations may perpetuate outmoded practices and technologies (Bores et al., 2007).

Clinical guidelines can also harm physicians professionally, and auditors and managers may unfairly judge the quality of care based on criteria from invalid guidelines (Bores et al., 2007). The well-intentioned effort to make clinical guidelines explicit and practical encourages the injudicious use of certain words (“should” instead of “may”, for example), arbitrary numbers (such as months of treatment, intervals between screening tests), and simplistic algorithms when supporting evidence may be lacking (Darlenski et al., 2010). Algorithms that reduce patient care to a sequence of binary (yes/no) decisions often do injustice to the complexity of medicine and the parallel and iterative thought processes inherent in clinical judgement. Words, numbers, and simplistic algorithms can be used by those who judge physicians to repudiate unfairly those who, for legitimate reasons, follow different practice policies (Bores et al., 2007).

Clinical guidelines are also potentially harmful to physicians as citable evidence for malpractice litigation, and because of their economic implications. Referral clinical guidelines can mean the shifting of patients from one specialty to another (Field & Lohr, 1990). A negative (or neutral) recommendation may prompt providers to

withdraw availability or coverage. A theoretical concern is that physicians may be sued for not adhering to clinical guidelines – although, as discussed in the third paper in this series (Field & Lohr, 1990), this has not yet become an important reality.

Clinical guidelines can harm medical investigators and slow scientific progress if further research is inappropriately discouraged. Clinical guidelines that conclude that a procedure or treatment lacks evidence of benefit, may be misinterpreted by funding bodies as grounds for not investing in further research, and for not supporting efforts to refine previously ineffective technologies (Darlenski et al., 2010).

C. Potential Harms to Health Care Systems

Health care systems and payers may be harmed by clinical guidelines if following them escalates utilisation, compromises operating efficiency, or wastes limited resources. Some clinical guidelines, especially those developed by medical and other groups unconcerned with financing, may advocate costly interventions that are unaffordable or that cut into resources needed for more effective services (Raine et al., 2005).

Clinical guidelines should not be accepted as a dogma, but should be practically applied in the context of sound knowledge of biology and medicine (Arii, 2007). The enhanced communications in medical research, as well as the dynamic development of new methods in medical practice, justify the incorporation of clinical guidelines in routine practice. For this reason, clinical guides require constant updating, to incorporate the current best evidence in making decisions

about the care of individual patients. This concept is in accord with the famous first aphorism of Hippocrates, “Life is short, and the art is long” (Jonsen, 2006).

A recent contribution in *The New England Journal of Medicine* stated that many clinical guidelines in the United States of America are influenced by the pharmaceutical industry and special interest groups: at present, the financial ties between clinical guidelines panels and industry are extensive. A survey of 685 disclosure statements by authors of clinical guidelines concerning medications found that 35% declared a potential financial conflict of interest. Clinical guidelines have been questioned when pharmaceutical and medical-device companies with a financial stake in the outcome provide substantial funding for their development and implementation (Steinbrook, 2007). We are still far from elucidating and implementing an optimal approach for the creation of clinical guidelines that will guarantee lack of influences, editorial independence, and an explicit centring of interest in public health.

Clinical guidelines are not a “cookbook” in medical practice. Medical education and training is the mandatory base for further development of skills and knowledge, in accordance with the concept of continuing medical education (Darlenski et al., 2010). Therefore clinical guidelines can be accepted as an auxiliary tool, instead of being the “conducting baton” in the hands of the physician. Clinical practice guidelines have been published to provide guidance to physicians who care for acutely or critically ill patients in pain (Agency for Health Care Policy and Research, 1992). More recently, recommendations and clinical guidelines specific to the critically ill population have been developed (Jacobi et al., 2002; Herr et al., 2006). Despite this, pain still remains undertreated in most critically ill patients

(Puntillo et al., 2002; Gélinas et al., 2004). This descriptive analysis was complementary to a previous study (Gélinas et al., 2006) on pain assessment in critically ill adults. The main objective of this report was to describe the experience of pain in postoperative cardiac surgery patients during their stay in the intensive care unit (ICU).

2.15.3 Gaps in the Guidelines Literature

A number of perspectives have been relatively neglected in the literature. Importantly, although most papers were written by nurses for nursing journals, it was difficult to identify the defining contribution of nurses to the development process of guidelines. This was because nurses' contributions were typically understated, whilst the contributions of other professions was acknowledged (Iliot et al., 2010).

Another gap was that of the resource cost of guidelines care. Cost was not mentioned in the MA/NICE guidance (2008), and rarely noted in the literature. The guidance stated that it was “reasonable to expect the process to take between three and six months from start to implementation” (MA/NICE, 2002, p. 4). This proved to be an underestimate, according to the 10 papers that reported the duration. The time ranged from six months (Laver et al., 2004) to three years (Porrett et al., 2003) with an average length of 15 months. Costs tended to be considered in the context of the situation prior to the protocol, as an intervention, and not in terms of the development, implementation or audit costs. Most of the accounts portrayed professional concerns as the driver for protocol-based care perhaps indicating an antipathy toward economic motives and also the difficulty of identifying the resource use costs.

There was an almost unanimous assumption that a standardised approach to care is a “good thing”, with little consideration of any adverse effects, resource use costs or professional implications of bureaucratic decision-making (Bail et al., 2009; Porter et al., 2007). While this may be attributable to publication bias, it is very strange to note the absence of the dissenting voice or negative findings.

The assumed effectiveness of standardised approaches and benefits for staff is being challenged, however. For example, Graham et al.’s (2003) study reported that only 5% of clinical guidelines had been evaluated to determine their impact on health outcomes. A critical review of care pathway evaluation research by El Baz et al. (2007) recommended that:

readers must be extremely cautious when interpreting the results of clinical pathway evaluation studies, because of the confounding factors and sources of contamination affecting the internal and external validity of most of the published studies (p. 6)
In addition to the equivocal evidence about the impact of standardised care on patient outcomes, there are concerns about the effects of this way of working on nurses, midwives and health visitors especially concerning their autonomy (Carrier et al., 2007; Bail et al., 2009) and professional identity (Hunter & Segrott, 2008).

Only one of the 33 studies reported patient involvement in decision-making. Wainwright et al. (2003) described how a patient representative support group instigated a protocol to improve the consistency of diagnosis and treatment of women with symphysis pubis dysfunction. These female patients were also members of the development group and co-authors of the paper.

Finally, scant consideration was given in the literature to the experience, roles, inter-professional dynamics and power relations of, or outcomes for, nurses. Staff

outcomes tended to be alluded to, or noted in passing. For example, Kinley and Brennan (2004) comment that “by sharing best practice (about oral care) it appeared that the nursing team had been empowered to change their practice”. There was little consideration of the potential of clinical guidelines to challenge the doctor–nurse status quo. There was only one example, cited by Wood (2002), noting that nurses became more confident in insisting that doctors abide by a standard concerning cannulation. In contrast, the papers emphasised that the nurses were safe and competent to take over specific clinical procedures or roles from medical practitioners. Locally developed clinical guidelines seemed to be driven by personal dynamics and the desire to improve patient care, rather than a systematic attempt to politicise traditional nursing roles. While this may reflect the timing and chosen vehicles for publication, this observation is particularly significant when ranged against the wider debate about the implications of extended practice and skill mix for the art of nursing (Doherty, 2009; Carryer et al., 2007; Shields and Watson, 2007; RCN, 2005).

2.15.4 Conclusion

From the systematic literature reviews related to the contribution of nurses in the development of clinical guidelines, this narrative review summarised practitioner knowledge from 33 studies that describe the development of protocols, guidelines and care pathways in the United Kingdom between 1991 and 2006. It has showed that the development process has been idiosyncratic, being embedded within a specific context and the multiple purposes of clinical guidelines. As such, the findings challenge the guidance that presents the process as simple, sequential, straightforward and resource neutral (MA/NICE, 2002; NICE, 2007). Such guidance

underplays what is known about the complexity of innovation and change in health care organisations (Iles and Sutherland, 2001; Greenhalgh et al., 2004).

Iliot et al. (2010) conducted a systematic review with the expectation that the synthesis of practitioner knowledge would provide an insight into the contribution that nurses make to clinical guidelines in the United Kingdom. Instead, they discovered, remarkably, that the role of the nursing profession was so understated in the nursing literature that it was almost invisible. This is disquieting, considering the role of these documents in evidence-based practice, the expanding of roles, and new services throughout the world (Iliot et al., 2010).

2.16 Summary

The studies reviewed were convincing in their argument that patients suffered from the adverse effects of the ICU environment irrespective of cultural background, and there is ample information provided to help improve nursing practice in this arena. In this complex area, where it is only truly possible to perceive another person's feelings by their external expression, it is assumed that nurses' perceptions of patients' feelings may affect their perception of needs, and their perception of patients' needs may affect their practice and prioritising of interventions. This study therefore aimed to explore the lived experience of nurses caring for patients in an intensive care unit (CCU) in the UK, following acute onset of coronary incidents, in an attempt to deepen the understanding of patients' feelings, needs and their expression. Thus, it is necessary to conduct research to explore the perceptions of both patients and nurses to serve the needs of patients better, and to bridge perception gaps between patients and nurses.

Stress is unavoidable and inevitable. The severity and symptoms of stress are dependent on individual characteristics (Demerouti et al., 2000; Maslach et al., 2000; Smith et al., 2000; Stordeur et al., 2001; Albar Marin & Garcia-Ramirez, 2005). Although it may not be preventable, stress should be assessed and treated in its early stages; this prevents the occurrence of burnout (Healy & McKay, 1999; Maslach et al., 2000; McGowan 2001; Shader et al., 2001; Albar Marin & Garcia-Ramirez, 2005).

2.17 The Environmental Stress Model and Support Research

Topf (2000), in his research on hospital noise pollution, used an environmental stress model with the aim of guiding research and clinical interventions. This commentary provides an expanded environmental stress model. Conceptual relationships between ambient stressors, ambient stress, and health are detailed. A three-part intervention, enhancement of person \pm environment compatibility, is specified. Details are provided on how this approach to reducing environmental pollution/hazards and sustaining these changes may be influenced by socio-political values, technological advances, and motivation for control over hazards. Personal variables thought to mediate the impact of environmental stress on health, including intrinsic sensitivity to specific hazards, personality, restricted capacities, other stresses, culture, personal preferences, stage of life, gender, and perceived social support, are highlighted. Research results on the stress and health effects of hospital noise on patients and nurses are summarised to provide support for the model.

The authors argued that reactivity to aversive physical characteristics of the environment involves relationships between stressors, stress, personal control, and health outcomes (Evans, 1982; Topf, 1984, 1994; Veitch & Arkkelin, 1995; Bechtel 1997). Stressors are events with the capacity to cause stress that include major personal and cataclysmic events. Stress is the subjective (i.e. psychological/felt) and/or physiological arousal that occurs when one is unable to exert personal control over a stressor. If effective coping occurs, stress is believed to be decreased. Phases in the stress response include an alarm reaction, resistance involving exercising

personal control and adaptation, and a phase of exhaustion or illness if personal control and adaptation are lacking (Topf, 2000). Figure 2.1 depicts an environmental stress model that attempts to capture reactivity to ambient stressors in the environment, and ways to intervene in this process. Ambient stressors are chronic, negatively valued aversive aspects of the physical environment (Campbell, 1983).

The degrees of intensity, duration, controllability, and predictability of specific ambient stressors are believed to affect their capacity to cause stress (Veitch & Arkkelin, 1995). Reading from left to right, Enhancement of Person \pm Environment Compatibility (EP \pm EC) an intervention can reduce ambient stressors directly. EP \pm EC can also reduce ambient stress indirectly via instruction in the control/coping facet of this intervention. Socio-political values and technological development are hypothesised to exert, directly or indirectly, positive or negative influence on ambient stressors through the EP \pm EC intervention. In an expansion of Topf (1984, 1994), the present model proposes that additional personal variables contribute to more or less reactivity to environmental stress. In addition, the desire for and felt control facilitate effective instruction in control over environmental stress. The clinical role implications for nursing are also discussed.

2.17.1 Clinical Applications for the Environmental Stress Model (Topf, 2000)

Nurses are in a good position to engage in an environmentally active role that can translate the facets of EP \pm EC into clinical reality. They serve as members of design and redesign teams involving hospital administration, architects, state regulatory agencies, physicians, building contractors, and engineers (Swain, 1991). Such teams can collaborate in assessing, designing, implementing, and evaluating the acoustical structure of a CCU and its equipment, to abate noise pollution.

Once design plans are operationalised, nurses can reduce remaining unnecessary sounds and instruct patients in personal control over noise if these strategies are assessed as needed (Topf, 1994). As may be apparent, the nursing process can be the vehicle for carrying out an environmental activist role. For example, in the assessment phase, instead of assuming that published research results on noise generalise to one's CCU, nurses might assess the average decibel level at the head of patients' beds with a sound level meter, and compare this to the United States Environmental Protection Agency (1974) standard of a 24-hour average of 45 dB(A) for adequate rest in hospital.

A patient questionnaire survey to assess subjective noise-stress and sleep disruption might be undertaken; items for sounds observed as typical of a unit but not listed on noise-stress instruments, should be added for comprehensiveness. Average patient scores on these indices, and average decibel levels similar to those in published CCU noise pollution studies, could lead to a unit diagnosis of either person-environment compatibility or incompatibility due to excessive sound levels and noise-induced stress. Ideally, such on-site assessment data and formal nursing research results could be brought to the design team for consideration in planning innovations.

Awareness that patients may have individual differences in response to ambient stressors, depending on age, personality, personal and cultural preferences, sensitivity, and individual differences in restricted capacities linked with illness (e.g. pain, medications, etc.), can facilitate advocacy for attention to these factors during the planning stage. An activist role requires being aware that technological advances

can facilitate EP±EC, and a thorough review of literature related to a unit's structural and equipment innovations. As noted earlier, as many as eight bedside equipment alarms can be abated with an alphanumeric paging system, involving a silent vibrating signal, alerting staff to a digital message (e.g. "check IV Bed 2") via a central console. Topf's (2000) tables provide a number of other technological advances for improving the hospital acoustical environment.

Once plans are approved, the nurse is involved in the implementation of a new or redesigned unit. Step-by-step guidelines for this process, involving, for example, time lines for CCU construction and equipment changes, transport of patients to a new unit, etc. are available (Swain, 1991).

After implementation of acoustical alterations, an activist role calls for repeating initial surveys of bedside sound levels and patient reactivity for the systematic evaluation phase of the nursing process, resulting in the identification of any necessary refinements. For instance, the addition of Wicker's (1979) cueing devices (i.e. for environmentally protective behaviour) in the form of small signs directing staff ("Please turn off equipment when not in use.") and visitors ("Please keep your voice down."), may be indicated for ongoing reduction of unnecessary noise.

Once a relatively compatible patient acoustical environment is in place, focus can be shifted to the two other EP±EC interventions. Topf's (2000) tables cite a number of potential remaining CCU sounds that may need to be reduced on an ongoing basis. Being aware that individual differences in patients, such as intrinsic sensitivity to noise and stage of life, may exacerbate noise stress, the nurse may put patients with similar predispositions in the same (e.g. quieter) area of the CCU. Finally, some

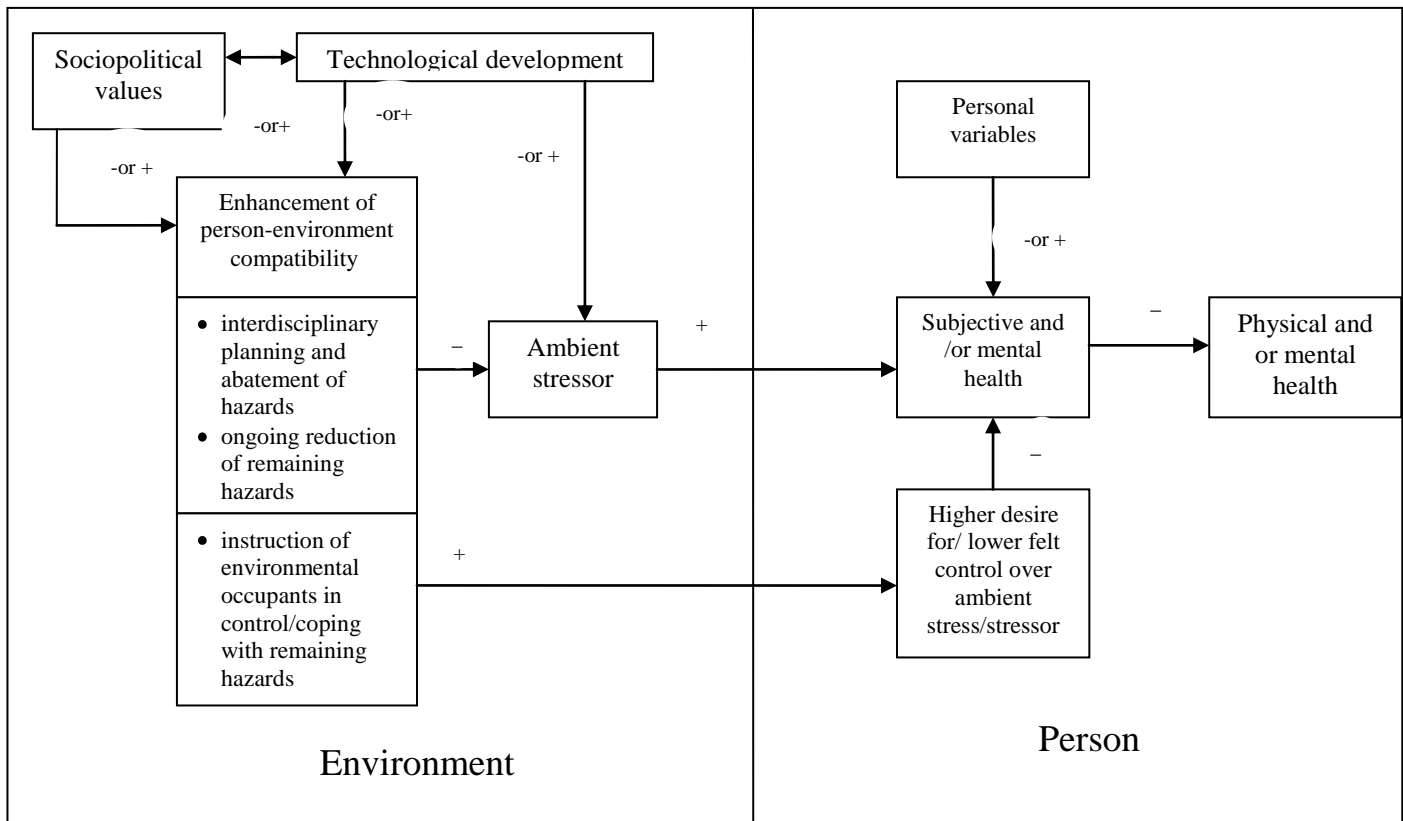
patients may require instruction in control over remaining noise following assessment of their noise stress. Several types of instruction in control over CCU noise are shown in Topf's (2000) tables.

2.17.2 Conclusion

This commentary described and provided research support for an expanded version of an environmental stress model. Although it is clear that complex relationships exist among ambient stressors, stress reduction interventions, ambient stress, and health, research has shown that CCU sound levels are excessive to the point of qualifying as an ambient stressor.

philosophical and ethical issues

hospital noise pollution



2.1. Figure: Environmental stress model suggesting relationships between stresses, enhancement of person-environment compatibility, and health expanded from Topf (1984, 1994)

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter details the basic strategies that the researcher adopted to develop accurate and interpretable evidence on the stress phenomenon. The researcher will describe the research philosophy, research design, research model, sampling methodology, data collection methodology, methods of data analysis, site and settings, and the research funding. Ethical considerations will be considered to protect research data as presented in this chapter. As a researcher in this study, this was my first experience of triangulating both quantitative and qualitative designs in one research study. It was the first time that the researcher had conducted qualitative research, and she aimed to follow the supervisor's instructions and the suggestions available within the literature to guide and develop the entire research framework.

The process of investigating and developing the study was found to be both exhilarating and insightful.

3.2 Philosophy of Research

In an attempt to answer research questions based on the assertion of Annells (1996), that: “It is essential that nursing researchers who engage with post-modern hermeneutic phenomenology carefully consider not only the methodology but also the philosophical intent of the study” (p. 712), the researcher based this study on the philosophy of critical realism. The term “critical realism” evolved from the expressions “transcendental realism” and “critical naturalism” (Archer et al., 1998, cited in Bergen, Wells & Owen, 2008). It logically connects the ontological, epistemological and methodological premises that underpin any psycho-social research work (Lipscomb, 2008). The philosophical basis of critical realism has been largely associated with the British philosophers Roy Bhaskar and his mentor Rom Harré, with more recent contributors including Archer (1995), Collier (1994), Danermark et al. (2002), Lawson (1997), Manicas (1987), Outhwaite (1987), Sayer (1992, 2000) and Bergin, Wells and Owen (2008).

Bhaskar (1978, 1989) promotes a transcendental argument to put forward a realist approach to science. Included among the distinctive features of his account of realism are: (1) reality as differentiated and stratified; (2) causality, generative mechanisms and emergence; and (3) the intransitive and transitive aspects of knowledge. These three features will be used to explore critical realism as a potential philosophical framework for the study of the effect of the socio-demographic characteristics of participants on the level of perception of stressors experienced by patients being nursed in CCU. This will provide a more inclusive

understanding that goes beyond positivism and constructivism if used separately (Bergin, Wells & Owen, 2008).

Reality in this framework is viewed as being stratified, whereby generative mechanisms belong to different layers or strata of reality (Collier, 1994). For example, strata can include “physical”, “chemical”, “biological”, “psychological”, “social” and “economic” factors, among others (Bhaskar, 1978, p. 119). It is this stratified ontology that differentiates critical realism from other ontologies; it engages experience, which in this instance reflects the stress phenomena from being in CCU (the outcome of individual events), events which reflect the socio-demographic characteristics of participants (realisation of these mechanisms), and mechanisms which reflects the factors causing the stress as shown by the Environmental Stressor Questionnaire (the casual powers of specific structures) (Bhaskar, 1989). The above elements were applied in the current study as follows: experience which reflects the stress phenomena from being in CCU, events which reflects the socio-demographic characteristics of participants, and mechanisms which reflects the factors causing the stress as shown by the Environmental Stressor Questionnaire.

Recent claims for critical realism as a metatheory and methodology for research are convincingly argued for by Bhaskar and Danermark (2006, cited in Bergin, Wells & Owen, 2008). In their words, “critical realism is... the ontologically least restrictive perspective, insofar as it is maximally inclusive as to causally relevant levels of reality and additionally maximally inclusive insofar as it can accommodate the insights of other metatheoretical perspectives... the ‘double inclusiveness’ of critical realism” (p. 294). Given the philosophical constraints of positivism and

constructivism, critical realism supports a wide range of research methods (Sayer, 1992, 2000). Both quantitative and qualitative research methodologies are valued, and the choice of research methods should depend on the type and focus of the study and what is hoped to be learned (Sayer, 1992, 2000). Sayer (2000) distinguishes between intensive (qualitative) and extensive (quantitative) research designs, and it is persuasively argued, that critical realism, through its encompassing ontology, bridges the dichotomy associated with both research approaches and allows research to reach areas that cannot otherwise be reached with traditional approaches. It achieves this by using methodological triangulation (Sayer, 1992, 2000; Archer et al., 1998).

Following extensive reading, I chose to use the philosophy of critical realism, as it fulfils the requirements of the proposed study. The main principles of this philosophy structured the entire research design of the study. The forthcoming discussion shows how critical realism is applied by using methodological triangulation in the research design.

Methodology

A mixed method of phenomenological (qualitative) and descriptive- comparative (quantitative) approaches to data collection and data analysis, was employed. Participants (both patients and nurses) who met the purposive inclusion criteria were interviewed for up to one hour. Data collection took place in two assigned NHS Trusts in London. The selected NHS Trusts provide a service for patients and are reported to be the busiest hospitals in the local area. Each has a separate CCU.

Following ethical approval, face-to-face in-depth interviews were undertaken. Patients who met the inclusion criteria and gave consent were interviewed in the cardiology ward 24–48 hours after the time of transfer from the CCU. CCU nurses who consented were interviewed in a convenient location, and at a suitable time, inside the hospital (the CCU manager room or the ward meeting room). Open-ended, tape-recorded, in-depth interviews, and the Environmental Stressor Questionnaire (ESQ), were used for data collection. Qualitative data was analysed using Giorgi's (1985), while the quantitative data was analysed using the SPSS (version 13). Ethical considerations were assured and maintained along the entire research process.

3.3 Research Ethics

Prior to the commencement of data collection, ethical approval was obtained from the Research Ethics Committee at Brunel University (Appendix A), and the local National Health Service Research Ethics Committees (Appendix B). A research information sheet was provided for all patients (Appendix C) and nurses (Appendix D). Written informed consent (Appendix E, Appendix F) was obtained prior to the interview and the opportunity was provided for participants to ask questions and this lasted approximately 10–15 minutes. Each participant (patient or nurse) was assigned by a code known only to the researcher, in order to preserve the confidentiality of all data. Patients and nurses were assured that all collected data remained anonymous and confidential. The researcher considered a full account of the ethical codes and guidelines that exist to protect the individual and their rights in the research process, and this included: the Data Protection Act (1998), the Declaration of Helsinki (World Medical Association, 1983), and ethics related to research in nursing (Royal College of Nursing, 2003).

Before obtaining consent to participate in the research, the researcher discussed the types of questions that participants were to be asked (Appendix G, Appendix H); this was because the subject of the discussion could have proved to be emotive for them, with enhanced recollection of unpleasant or uncomfortable experiences or events. Participants were assured that the interview could be stopped at any time to allow them to rest, and to recommence the discussion when they felt ready – and that if they wished to terminate the interview, that they had the right to do so. Patients were reassured that termination of the interview would have no impact on the quality of care that was provided to them. Counselling services would be made available if required. The researcher outlined that they would be available to discuss with the patient any of their concerns and difficulties.

The collected and analysed data was stored in the sole custody of the researcher, using a personal laptop with an encryption device, and with a back-up protected by a password, on the university computers. An additional requirement demanded by some research journals, is that data should be retained for at least five years. The five years' storage is to do with the sponsor's research governance responsibilities. Access to this data enabled the researcher to add support to the original conclusions, using current statistical analysis.

3.4 Research Design

Broadly speaking, research methods are the techniques used by a researcher to structure a study, and to gather and analyse information relevant to the research question (Polit & Beck, 2004). Research methods are also described as the entire plan of the research (Bowling, 2002). The two main research designs are qualitative,

and quantitative with methodological triangulation (Tashakkori & Teddlie, 1998). There are epistemological and ontological differences between the two designs. Within this research, the philosophy of critical realism allowed me to bridge the dichotomy associated with the single-method research approach, and facilitated the research reaching into areas that would not be possible to access within traditional approaches, and by using methodological triangulation alone (Sayer, 1992, 2000; Archer et al., 1998). Quantitative research originated in positivist epistemology, where knowledge is viewed as separate and interdependent from individuals. Positivists believe in a single reality, which is objective and discovered through observation and measurement; thus, the requirement for bias elimination and objectivity in quantitative research designs (Hansen, 2006).

Qualitative research emerged from a holistic epistemology, where the knowledge and the knower are interdependent. It was founded within the constructivist/interpretivist paradigm, and was seen as humanistic and subjective, with the aim of revealing new understandings and developing new theories, where reality was socially constructed (Todres & Holloway, 2006). Qualitative research encourages individuals to reflect in depth on their experiences, and allows researchers to understand human behaviour and experiences, as well as gain new insights into issues and generate new knowledge (Hansen, 2006).

Polit & Beck (2004, p. 279) stated that the use of both qualitative and quantitative methods in a study is complementary; they represent words and numbers, the two fundamental languages of human communication (Denzin & Lincoln, 1994, p. 224). Proponents of triangulation recognise that the application of multiple approaches to an investigation can improve the reliability and validity of data, because the strength

of one method may help to compensate for the weakness of another. The ultimate goal of triangulation is to “overcome the intrinsic bias that comes from single-method research” (Denzin, 1989, cited in Speziale & Carpenter, 2007, p. 381; Creswell 2003, p. 208). Researchers may also choose triangulation to confirm findings and conclusions (Speziale & Carpenter, 2007, p. 381).

3.4.1 Rationale for Selecting Methodological Triangulation

There is a paucity of research on the CCU patient’s experience of stressors (Marosti & Dantas, 2006); the researcher therefore decided to conduct a study using in-depth interviews (qualitative approach). The flexibility of the qualitative approach is suited to the task of answering the research questions (Polit & Beck, 2008, p. 17), but there are several limitations to this approach. Firstly, human beings are used directly as the instrument through which information is gathered, and humans are extremely intelligent and sensitive, but fallible, tools. The subjectivity that, on the one hand, enriches the analytic insight of skilful researchers, can yield trivial “findings” in less competent inquiries (Polit & Beck, 2004). Secondly, qualitative research involves a relatively small group of people, and this raises the question of the generalisability of findings (Polit & Beck, 2004; Domholdt, 2005). To reduce research bias, to overcome the qualitative research method’s limitations, to maintain the consistency of the format of answers, to improve trustworthiness, and for better understanding of the entirety of the stress phenomena experienced by patients in a CCU, a questionnaire, as a quantitative tool, was used, in combination with open-ended questions (Creswell, 2003; Tashakkori & Teddlie, 1998). The statistical element not only strengthens but also politicises the patients’ narratives about their lived experience (Russell, 1999).

Thirdly, the use of a mixed method approach, however, was one of the recommendations of a previous, single approach, UK-based study, conducted by Cornock (1998) that employed an Environmental Stressor Questionnaire (ESQ). Cornock stated that “the use of different methodologies to counter any limitations of a single approach would be recommended to further examine the patient experience of CCU stressors” (Cornock, 1998).

3.5 Phenomenology

The word “phenomenology” originates in the Greek word “phainein”, meaning “to appear” (Crotty, 1998). It has been, and continues to be, an integral field of inquiry, that cuts across philosophical, sociological and psychological disciplines. This rigorous, critical, systematic method of investigation is a recognised qualitative research approach, applicable to the study of phenomena important to the discipline of nursing (Speziale & Carpenter, 2007). I found that the phenomenological approach was the most suitable research design, as the topic under study was related to the lived experience of patients being admitted to a CCU and the perception of nurses providing care for CCU patients.

However, the term “phenomenology”, although used frequently in nursing scholarship, is accompanied by confusion surrounding its nature (Dowling, 2007). Firstly, it is not only a research method that is employed frequently by qualitative researchers it is also a philosophy (Dowling, 2007). Secondly, there are as many styles of phenomenology as there are phenomenologists (Spiegelberg, 1975). There are a number of schools of phenomenology, and even though they have some commonalities, they also have distinct features. Furthermore, the many perspectives of phenomenology locates its various forms in the positivist (Husserl), post-

positivist (Merleau-Ponty), interpretivist (Heidegger), and constructivist (Gadamer) paradigms (Dowling, 2007). Finally, a type of phenomenology as a research method has evolved in the US; this is known as “new phenomenology” (Crotty, 1998). It is evidence of the transformation that has occurred in phenomenology, as a research method that can be utilised by nurses (Dowling, 2007).

Husserl’s adopted intentionality is a fundamental concept for understanding and classifying conscious acts and experiential mental practices (Dowling, 2007). Intentionality puts forward the principle that every mental act is related to some object (Moran, 2000), and implies that all perceptions have meaning (Owen, 1996). Husserl’s goals are strongly epistemological, and he regarded experience as the fundamental source of knowledge (Dowling, 2007). For Husserl, the aim of phenomenology is the rigorous and unbiased study of things as they appear, in order to arrive at an essential understanding of human consciousness and experience (Owen, 1996).

The hermeneutic phenomenology of Heidegger, like that of Husserl, concerns human experience as it is lived. He agreed with Husserl’s declaration “to the things themselves”, but does not agree with Husserl’s view of the importance of description rather than understanding (Racher, 2003). Heidegger’s focus is ontological, believing that the primary phenomenon that concerned phenomenology was the meaning of Being (presence in the world) (Cohen & Omery, 1994). He uses the phrase “being-in-the-world” to refer to the way human beings exist, act, or are involved in the world (van Manen, 1990).

Merleau-Ponty developed his views from the phenomenology of Husserl and Heidegger. The goal of Merleau-Ponty's "phenomenology of origins" is to help us view our experiences in a new light, not relying on the categories of our reflective experience; a pre-reflective experience (Moran, 2000). The usefulness of his writings for nursing researchers is evident in his utilisation of the four existential experiences considered to belong to the fundamental structure of human life; lived space (spatiality), lived bodily experience (corporeality), lived time (temporality), and lived human relations (relationality or communality), are productive for the process of phenomenological questioning, reflecting and writing (van Manen, 1990).

Gadamer followed the work of Heidegger. The two central positions advanced by Gadamer are: (a) prejudgement (one's preconceptions, , prejudices or horizons of meaning that are part of linguistic experience, and that make understanding possible) and, (b) universality (the person who is expressing themselves and the person who understands are connected by a human consciousness, which makes understanding possible) (Dowling, 2007). The inquiry using Gadamerian hermeneutics involves dialogue, rather than individual phenomenology, and interpretation permeates every activity, with the researcher considering social, cultural and gender implications (Koch, 1996).

Phenomenology, rooted in the philosophical tradition developed by Husserl and Heidegger, has two schools: descriptive phenomenology and interpretive phenomenology (hermeneutics). Descriptive phenomenology was developed first by Husserl (1962) and his philosophy emphasised descriptions of the meaning of human experience. Heidegger, a student of Husserl, moved away from his

professor's philosophy into interpretive phenomenology (Polit & Beck, 2008). Heidegger (1962, cited in Polit & Beck, 2004, p. 253), and stressed interpreting and understanding – not just describing – human experience (Polit & Beck, 2004).

3.5.1 Hermeneutic Phenomenology

Etymologically, “hermeneutics” derives from the Greek word (*hermeneuein*), which means “to interpret” or “to understand” (Crotty, 1998). Interpretative frameworks within phenomenology are used to search out the relationships and meanings that knowledge and context have for each other (Lincoln & Guba, 1985). I selected hermeneutic phenomenology in an attempt to understand the entirety of cause and effect in coping strategies regarding stress, and the effect of the socio-demographic characteristics on the perception of stress phenomenon. Published nursing research is grounded in the philosophic theory of hermeneutics, and several authors have discussed the underpinning of this particular research approach, offering clarity and direction for others (Cris & Tanner, 2003; Geanellos, 2000; Todres & Wheeler, 2001; van der Zalm & Bergum, 2000, cited in Speziale & Carpenter, 2007, p. 88). Spiegelberg (1975, p. 57) and Gadamer (1989) elaborated, by noting that hermeneutics bridges the gap between what is familiar in our world and what is unfamiliar.

Gadamer (1989), in emphasising the importance of language in an individual's understanding of the world, believed that understanding arises from interpretations (which would incorporate researchers' prejudices), which originate in past experiences and socialisations, and are viewed as ontological. Gadamer believed that past experience enhances understanding and supports its achievement through

openness, dialogue, participation and the blinding of the researcher's horizon with the horizon of the phenomenon being studied (Koch, 1996).

As in all research, congruence between the philosophic foundation of the study and the methodological processes is critical. The basic elements of hermeneutic philosophy and interpretive inquiry are addressed in the following narratives within the context of Ricoeur (1976), Heidegger (1927, 1962), and Gadamer (1976). Ricoeur (1976) described the interpretive process as a series of analytic steps and acknowledged "the interrelationship between epistemology (interpretation) and ontology (interpreter)" (Geanellos, 2000, p. 112). Crist and Tanner (2003) also describe the interpretive process of hermeneutic phenomenology. They debate, brainstorm, and discuss interpretations that add depth and insight to the context area of the inquiry. A major difference between hermeneutic phenomenology and other interpretations of the phenomenological research method is the fact that the method does not require researchers to bracket their own preconceptions of theories during the process (Lowes & Prowse, 2001).

Analysis is essentially the completing of the hermeneutic circle, which proceeds from naïve understanding to an explicit understanding that emerges from data interpretation (Speziale & Carpenter, 2007). Allen and Jenson (1990) describe the hermeneutic circle thus: "It is supposed to move forward and backward, starting at the present. It is never closed or final. Through rigorous interaction and understanding, the phenomenon is uncovered. The interpretive process that underlines meaning arises out of interactions, working outward and back from self to event and event to self". The three main steps of the hermeneutic phenomenology circle are:

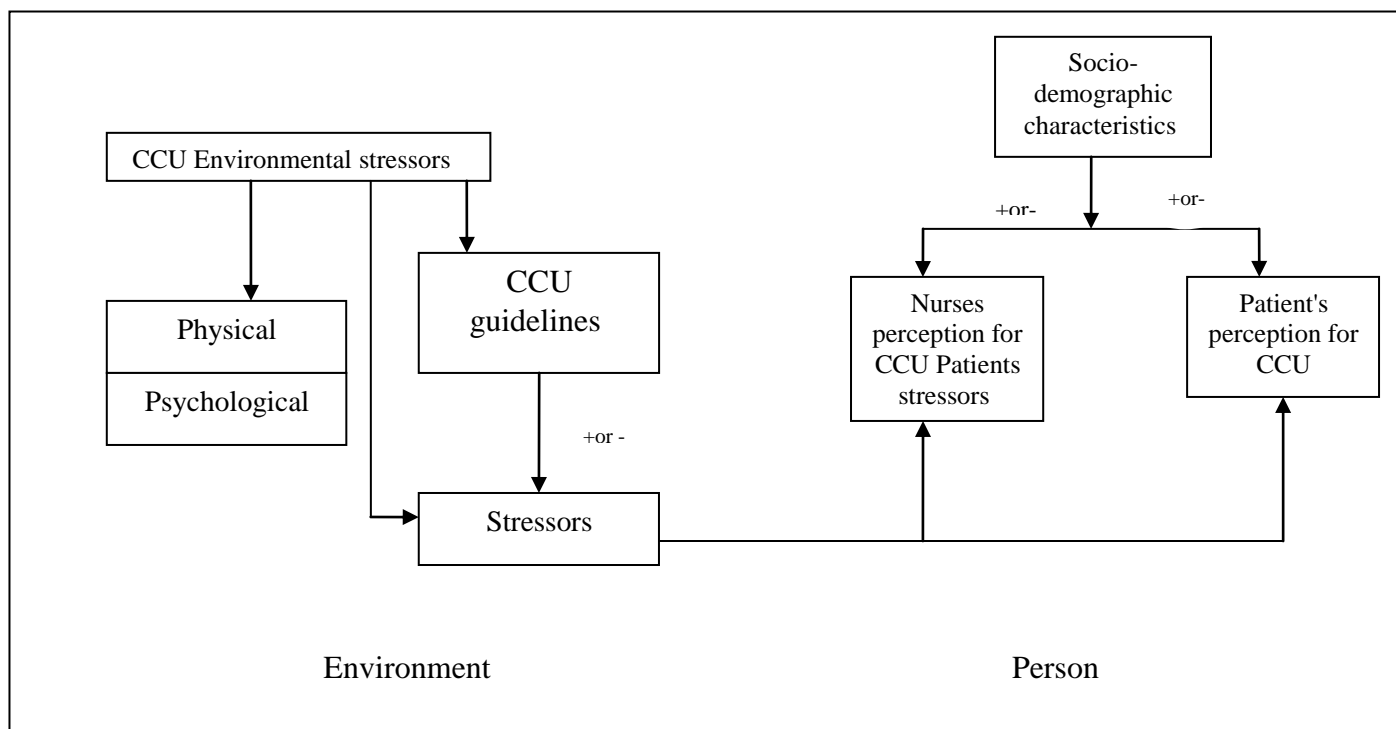
1. First, during the naive reading, the researcher reads the text as a whole to become familiar with it, and begins to formulate thoughts about its meaning for further analysis.
2. Structural analysis follows as the second step, and involves identifying patterns of meaningful connection. This step is referred to as an *interpretive reading*.
3. Interpretation of the whole follows, and involves reflecting on the initial reading, along with the interpretive reading, to insure a comprehensive understanding of the findings.

3.5.2 Rationale for Selection of the Research Method

A hermeneutic phenomenological approach was selected to guide the research project. This approach allows for understanding and interpretation of the meaning of stress phenomena as experienced by patients in a CCU, and “gives voice” to the person being studied (Domholdt, 2005). It promotes the openness and dialogue required for the achievement of this understanding. The hermeneutic circle encouraged the development of understanding between researcher and participants concerning their experiences in a CCU, as well as acknowledging the researcher’s previous knowledge and prejudices (Pascoe, 1996). My prior understanding in this project will be based on more than three years’ experience in a CCU, in Yemen, Abu-Dhabi, and the Netherlands.

3.6 Research Model

The Environmental Stress Model previously discussed in Chapter 2, was found to be the best model to serve the current study, with slight modification (Figure 3.1) from the original (Figure 2.1).

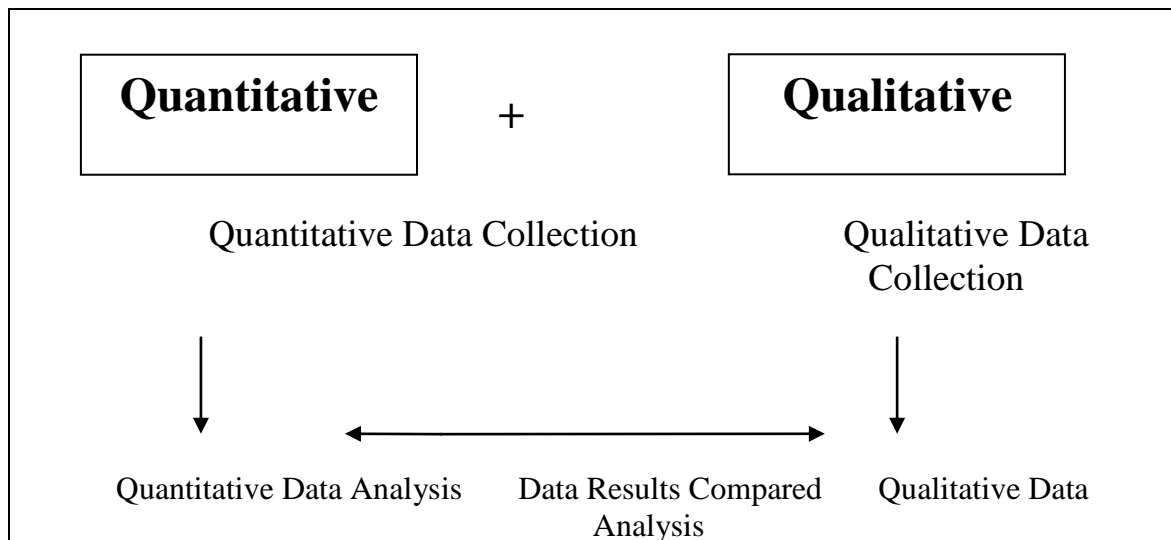


3.1. Figure: the modified version of the Environmental Stress Model adopted in the study

3.7 Data Collection Strategy

The concurrent triangulation design is the most common and well-known approach to mixing methods (Creswell & Clark, 2007) (Figure 3.2). The purpose of this design is “to obtain different but complementary data on the same topic” (Morse, 1991, cited in Creswell & Clark, 2007, p. 62), to best understand the research matter. The intent in using this design is to offset the weakness inherent within one method with the strength of the other (or conversely, the strength of one adds to the strength of other) (Tashakkori & Teddlie, 2003; Creswell & Clark, 2007; Creswell, 2009). The concurrent triangulation design is a one-phase design, in which the researcher implemented the in-depth interview (qualitative method) and the ESQ questionnaire (quantitative method) models during the same time frame, and with equal weight (Creswell & Clark, 2007). Patients and nurses were interviewed on one occasion each, and for one hour each, to talk about the experience of the patient in the CCU. I felt that the traditional mixed method model was advantageous because

it could result in well-validated and substantiated findings. In addition, the concurrent data collection method results in a shorter data collection time period as compared to one of the sequential approaches of the mixed method (Creswell, 2009).



3.2. Figure: Concurrent Triangulation Design Retrieved: Creswell, J.W. (2009) Research Design :Qualitative, Quantitative, and mixed methods approach.3rdedn. SA

3.8 Type of Data Collection

After obtaining ethical approval and gaining written informed consent from participants, tape-recorded unstructured in-depth interviews were used in combination with a questionnaire, to collect data. Concerning interviewing, Witzel (1985, cited in Fleck, 2002, pp. 87–88) suggested, firstly, using a questionnaire together with the interview is fruitful. This allows the researcher to reduce the number of questions, and focus on what is particularly valuable, in a tight time schedule – e.g. to use the short time of the interview for more essential topics. Secondly, to use this questionnaire after the interview makes more sense. Thirdly, that tape recording the interviews can improve the contextualisation of statements.

3.8.1 Rationale for Personal In-Depth Interviews

With respect to the researcher's experience of ICUs, the researcher does not have a preconceived view of patient experiences in CCUs, and found that in-depth, open-ended interviews provided a better understanding of the lived stress phenomena in these units. The researcher used her insight and experience of ICUs to rationalise the findings from CCUs. One of the most important advantages of face-to-face interviews is that the refusal rate for participation is very low (Denzin & Lincoln, 1994; Polit & Beck, 2008). With face-to-face interviews, participants meet the researcher, who will try to explain the importance of the research through the written research participation sheet, and highlight the importance of their participation to overcome the stress phenomena of CCUs for future patients.

Unstructured, in-depth interviews encourage respondents to define the important aspects of the stress phenomenon and elaborate on what is relevant to them, rather than being guided by the investigator. In conducting in-depth interviews, the researcher allows participants to tell their stories, with little interruption. I used the unstructured in-depth interview technique for the first time in this research, and used the suggestions of van Manen (1990) to guide phenomenological interviewing in a manner that was likely to produce rich descriptions of the CCU experience (Polit & Beck, 2008, pp. 392–393):

1. "Describe the experience from inside, as it were; almost like a state of mind; the feelings, the mood, the emotions, etc.
2. Focus on a particular example or incident of the object of experience: describe specific events, an adventure, a happening, or a particular experience.
3. Try to focus on an example of the experience that stands out for its vividness, or as it was the first time.
4. Attend to how the body feels, how things smelled, how they sound, etc."

Following van Manen's position (1990), the interview suggestions I used involved a series of interview questions, presented later, in Chapter 4 (Sections 4.2. and 4.3) of the study.

Kahn (2000, cited in Polit & Beck, 2008, p. 293), discussed unstructured interviews in hermeneutic phenomenological studies, and recommended that interviews resemble conversations. As patients were interviewed from between five and seven days after admission to CCU, a retrospective approach was undertaken, as advocated by Kahn (Polit & Beck, 2008). The researcher began with a general question for patients: "Can you describe your experience of being a CCU patient, please?", and for nurses: "Can you describe for me the patient's experience of being a CCU patient, from your own perspective, please? Can you give a case example?", afterwards probing for more detail until the experience was thoroughly described (Speziale & Carpenter, 2007; Polit & Beck, 2008).

Using open-ended questions allowed respondents to move freely in their description of the stress phenomenon (Speziale & Carpenter, 2007, p. 37). At the end of a one-hour interview, the patient or the nurse was asked to complete the Environmental Stressor Questionnaire.

3.9 Data Collection Tools

3.9.1 Audio Tapes

To recall the interview, audio tapes were used, as these are the most effective method of recording interviews (Silverman, 2001, pp. 161–162). Taped records

have their own advantages over other types of qualitative data collection, as detailed below (Sack, 1984, cited in Silverman, 2001):

1. They are available to the scientific community. Many other researchers have used audio tapes in their studies, such as Russell (1999), Wong and Arthur (2000) and Adamson et al. (2004), as they achieve valuable and significant results related to nursing science.
2. Audio tapes can be replayed and the transcriptions improved, and analyses can take off on a different tack, unlimited by the original transcripts. The researcher can depend on memory to summarise different people's perceptions, but it is simply impossible to remember (or even to note at the time) such matters as pauses, overlaps, or in-breaths. Such features matter to all of us, not just to analysts of conversation; to read somebody else's mind is routine and necessary when we study a lived experience.
3. Most importantly, tapes allow for the inspecting of sequences of utterance by CCU patients and nurses, concerning the stress experienced by patients, without being limited to extracts of previous studies conducted in the same field.

Taped records allow for studying conversation and more focus on the actual details of stress experienced by CCU patients (Silverman, 2001). In the current study, with the large number of participants (total 88) and the researcher dealing with a qualitative approach for the first time, it was found that digital tape recording was the best method to use to gather valuable data on patients' and nurses' perceptions of the CCU.

3.9.2. The Instrument (Questionnaire)

The patient's experience with CCU stressors was assessed using the "Environmental Stressors Questionnaire" (ESQ) (Appendices I and J), which was developed by Cornock (1998). The ESQ is a modified version of the "ICU Environmental Stressors Score" (ICUESS), developed by Cochran and Ganong (1989). The new ESQ consists of 50 items (42 items from the original scale of ICUESS with an additional eight items added from the modified scale drawn from Cochran and Ganong's (1989) study). The ESQ uses a rating scale of 1–4 in which 1 = not stressful and 4 = extremely stressful. The questionnaire also asks the respondents to list the three most stressful items, together with any items they think should be added to the questionnaire. Content and face validity was examined by the researchers (Cochran and Ganong, 1989), and the reliability of the tool assured by Cornock (1998) in his replication of Cochran and Ganong's study (the reliability coefficient is 0.70).

The ESQ has been used by previous researchers who tried to understand the stress phenomena in general ICUs and critical care units (Cochran & Ganong, 1989; Novaes et al., 1997; Cornock, 1998; Novaes et al., 1999; So & Chan, 2004; Hweidi, 2005), in liver transplant ICUs (Biancofiore et al., 2005), and in CCUs (Marosti & Dantas, 2006). This makes it a flexible tool that can be used in different settings.

In assessing a multi-item scale, internal consistency reliability assessment is the first step to be undertaken, so as to avoid additional dimensions produced by factor analysis due to "garbage" items (Churchill, 1979). "Cronbach's alpha" is the most commonly used tool for testing the reliability of a multi-scale measurement tool. The purpose of this test is to assess whether all items are measuring the same thing (DeVellis, 1991). De Vaus (2002) and Nunnally (1978) mentioned that the value of

alpha equal to 0.70 or above indicates that the items make a reliable set. Items of the construct should be checked to see to what extent they reflect the content validity (DeVellis, 1991). Reliability analysis was first used to remove items with low item-total correlations (<0.3) (Nunnally, 1978). Coefficient alpha value above 0.7 is generally accepted to demonstrate a high level of homogeneity within the scale, and to determine whether the item reflects a single dimension (Nunnally, 1967, p. 226; Churchill, 1979; Hinkin et al., 1998). However, Nunnally (1978) suggests that a coefficient alpha of 0.5 or 0.6 is satisfactory in the early stages of research. A pilot study was conducted using 10% of the sample size (11 participants). The reliability of Cronbach's alpha was equal to 0.91 for the entire 50 ESQ items (Table 3.1).

3.1. Table: ESQ reliability statistics

Cronbach's Alpha	N of items
.905	50

The questionnaire includes some socio-demographic data for patients (gender, age, diagnosis, marital status, educational level, number of previous admissions, and type of admission “planned or emergency”) and nurses (gender, age, educational level, experience in a CCU, experience in other medical and surgical critical care units).

3.10 Sampling Methodology

Sampling is the process of selecting a portion of the population to represent the entire population (Polit & Beck, 2008, p. 765). It provides the participants for the investigation (Speziale & Carpenter, 2007, p. 94). Sampling techniques can be divided into two types: probability sampling and non-probability (purposive) sampling. However, neither purposive nor probability sampling techniques are the sole approach of either the quantitative or qualitative method. Any study, whether single-method or mixed-method, can use any of a variety of sampling techniques, or can blend probability and non-probability sampling techniques to answer the research questions under study (Tashakkori & Teddlie, 2003).

Selecting a sampling design involved making a series of decisions, not only about how many individuals to include in the study and how to select these individuals, but also about the conditions under which this selection would take place (Onwuegbuzie & Collins, 2007). These decisions were extremely important and, as stated by Curtis et al. (2000), “It seems essential to be explicit about these decisions, rather than leaving them hidden and to consider the implications of the choice for the way that the study can be interpreted” (p. 1012). Unfortunately, the vast majority of qualitative and quantitative researchers do not make clear their sampling decisions. Indeed, the exact nature of the sampling scheme is rarely specified (Onwuegbuzie, 2002b). As such, sampling in qualitative and quantitative research appears to be undertaken as a private enterprise that is unavailable for public inspection. However, as noted by Curtis et al. (2000), “Careful consideration of sampling designs can enhance the interpretive power of a study by ensuring that the scope and the limitations of the analysis are clearly specified” (p. 1013). Thus, in the current study, the researcher adopted a sampling framework to help in the quest

to select an optimal sampling design for mixed method research within the study time-frame constraints.

In addition, it was important that the selected samples should generate sufficient data pertaining to the phenomenon of interest, to allow the development of thick, rich descriptions (Tadross & Holloway, 2006; Kemper et al., 2003; Curtis et al., 2000; Miles & Huberman, 1994), thereby increasing descriptive validity and interpretive validity (Maxwell, 1992). Such samples also would help to improve representation. Borrowing the language of qualitative researchers, both the qualitative and quantitative components of the study aimed to yield data that had a realistic chance of reaching data saturation (Flick, 1998; Morse, 1995), theoretical saturation (Strauss & Corbin, 1990), or informational redundancy (Lincoln & Guba, 1985). Representation was further improved by selecting samples that allowed the researcher to make statistical and/or analytical generalisations. That is, the sampling design was one which would allow the mixed-method researcher to make generalisations to other participants, populations, settings, contexts, locations, times, events, incidents, activities, experiences, and/or processes; the sampling design should facilitate internal and/or external generalisations (Polit & Beck, 2004; Tashakkori & Teddlie, 2003; Maxwell, 1992).

3.10.1 Purposive Sampling (Non-Probability)

Purposive sampling is a specialised form of non-probability sampling that is typically used for qualitative research (Domholdt, 2005), and is used most commonly in phenomenological inquiry (Speziale & Carpenter, 2007). This method of sampling selects individuals for study participation based on their particular

knowledge of a phenomenon, for the purpose of sharing that knowledge (Speziale & Carpenter, 2007; Polit & Beck, 2008).

Patton (1990) stated that:” The logic and power of purposive sampling lies in selecting information-rich cases for study in depth. Information-rich cases are those cases from which one can learn a great deal about issues of central importance to the purpose of the research” (Patton, 1990, cited in Speziale and Carpenter, 2007, p. 94).

In purposive sampling, several strategies have been identified (Patton, 2002, cited in Polit & Beck, 2008, p. 355). Patton’s classification shows the kind of diverse strategies qualitative researchers have adopted to meet the conceptual and substantive needs of their research: maximum variation sampling, homogeneous sampling, extreme case sampling, intensity sampling, typical case sampling, critical case sampling, criterion sampling, theory-based sampling, and sampling confirmation and disconfirmation (Polit & Beck, 2008, pp. 355–356). In this research project, the researcher decided to use criterion purposive sampling.

3.10.2 Simple Random Sampling (probability)

A simple random sample is one in which each person or unit in the clearly defined population has an equal chance of being included in the sample (Tashakkori & Teddlie, 2003; Polit & Beck, 2004). The advantage of this method is that the research data can be generalised from the sample to the entire population within a computable margin of error (Tashakkori & Teddlie, 2003).

3.10.3. Rationale for Sampling Selection

Based on two reasons, the random criterion purposive sampling procedure was selected. **First:** within the framework of phenomenological research, the sample was required to have experienced the phenomena of stress in CCU, and this type of sampling fills such a requirement (Tadres & Holloway, 2006). **Second:** the use of a mixed-method design required frequent use of mixed-method sampling procedures in order to simultaneously increase inference quality (internal validity and trustworthiness) and generalisability/transferability (Polit & Beck, 2004; Tashakkori & Teddlie, 2003). To ensure this, the researcher used the random (probability) sample to increase generalisability/transferability, and the purposive (non-probability) sample to increase inference quality.

3.10.4 Inclusion-Exclusion Criteria for Patients

To be included in the study, patients had to: (1) be a patient with a history of cardiac disease (ischemic heart disease, arrhythmias, cardiogenic shock, etc.) (Marosti & Dantas, 2006); (2) have spent a minimum of three days and maximum of five days in the CCU of one of the assigned hospitals, to be able to cover most aspects addressed by the ESQ and to give answers to the open-ended questions within the in-depth interviews (Biancofiore et al., 2005); and (3) be aged between 25 and 75 years (Marosti and Dantas, 2006). Young adults aged 25–45 years are most likely to be admitted to CCU with a case of arrhythmia (e.g. junctional arrhythmia) (Aboukhilil, 2008), while other types of cardiac disease are most likely to be found among people older than 45 years (Fleming et al., 1991; Ancona et al., 2004; Hagerman et al., 2005).

The decision to exclude patients from the study was based mainly on the data collected about the patient's physical and psychological stability, as evaluated by the attending medical staff (Biancofiore et al., 2005). Patients excluded were: (1) patients admitted to the CCU within the previous year (because memory of the previous experience may have affected the perception of stress during the second admission) (Biancofiore, et al., 2005); (2) patients with a history of psychological or neurological disturbances or any other conditions that may have affected their ability to understand the interview questions and the questionnaire, or altered the level of perceived stress, and thus have reduced the reliability of their responses (Cornock, 1998; So & Chan, 2004; Heweidi, 2005; Biancofiore et al., 2005; Marosti & Dantas, 2006); (3) patients treated with sedatives or any psychotropic agents during the previous three days (Biancofiore et al., 2005), due to side effects of those drugs namely, possible confusion, memory loss and increased anxiety (Saunders: Nursing Drug Handbook, 2007, pp. 128–129/797); and (4) patients with a history of delirium (ICU psychosis), which can occur when a patient has metabolic imbalance and electrolyte abnormalities (McGuire et al., 2000).

3.10.5 Inclusion-Exclusion Criteria for Nurses

Purposive sampling aimed to generate a sample of nurses with a range of educational qualifications (Diploma to Masters degree) and professional experience (1–15+ years) to enable comparisons regarding perspectives. Nurses with less than six months' experience were excluded, unless they were working in another medical or surgical critical care unit before working in CCU. Experience is an important issue for selecting CCU nurses (Ashworth, 2000; International Council of Nurses, 2000), and six months was presented by Bijttebier et al. (2001) to be sufficient for any nurse to adapt to CCU work

3.10.6 Rationale for the Selected Socio-Demographic Characteristics to Reveal Level of Perception

The American Institute of Stress states that, “If you were to ask a dozen people to define stress, or explain what causes stress for them, or how stress affects them, you would likely get 12 different answers to each of these requests. The reason for this is that there is no definition of stress that everyone agrees on; what is stressful for one person may be pleasurable or have little effect on others, and we all react to stress differently.” Coping with stress is not only determined by environmental characteristics but also by personal characteristics (training, experience, coping styles, etc.) and the relationship of personal variables to stress experience. Malacrida et al. (1991), Porte (1977) and Gribbins and Marshall (1982) found that increased experience and educational level are associated with the development of personal coping capabilities. The author’s experience in CCUs in Yemen, Abu-Dhabi and the Netherlands, is that patients may vary in the way they respond to stressful events and in the way they cope with stress. The author found it beneficial to identify sample socio-demographics when studying this lived phenomenon.

The ESQ questionnaire is a rating tool for measuring levels of stress, ranging from 4 = “extremely stressful”, down to 1 = “not stressful”, thus making a range of 50–200 as a total score, This reflects levels of perception (So & Shan, 2004; Hweidi, 2005). From the available literature, it is apparent that there is variation in the level of perception, due to various factors such as extremes of age. Marosti and Dantas (2006) found that elderly patients tolerated stress well, whereas Hweidi (2005) reported that young people were able to tolerate CCU stressors.

Additional factors that could affect perception of stress include marital status and family relationships (Cornock, 1998). These may provide valuable insights into patient responses to the Environmental Stressor Questionnaire item 14 (missing your husband or wife), 22 (only seeing family and friends for a few minutes each day) and 47 (being unable to fulfil family roles). Additional factors that may influence a patient's perception of stress whilst being cared for in a coronary care unit include: economic status (Hweidi, 2005; Marosti & Dantas, 2006), method of admission to CCU (Ancona et al., 2004), and number of admissions (Leur et al., 2004; Hweidi, 2005).

3.10.7 Sample Size

In addition to deciding how to select the samples for the qualitative and quantitative components of a study, mixed-method researchers should determine the appropriate sample sizes. The choice of sample size is as important as the choice of sampling scheme, because it also determines the extent to which the researcher can make statistical and/or analytic generalisations (Onwuegbuzie & Collins, 2007). Unfortunately, as has been the case with sampling schemes, discussion of sample size considerations has tended to be dichotomised, with small samples being associated with qualitative research and large samples being linked to quantitative studies. Yet, small samples can be used in quantitative research that represents exploratory research or basic research. In fact, single-subject designs, which routinely utilise quantitative approaches, are characterised by small samples. Conversely, qualitative research can utilise large samples, as in the case of programme evaluation research and the describing of a lived phenomenon (Onwuegbuzie & Collins, 2007). Moreover, to associate qualitative data analyses with small samples is to ignore the growing body of literature in the area of text

mining, the process of analysing naturally occurring text in order to discover and capture semantic information (Del Rio et al., 2002; Liddy, 2000; Powis & Cairns, 2003; Srinivasan, 2004).

The size of the sample should be informed primarily by the research objective, research question(s), and, subsequently, the research design (Onwuegbuzie & Collins, 2007). As Sandelowski (1995) stated, “Aa common misconception about sampling in qualitative research is that numbers are unimportant in ensuring the adequacy of a sampling strategy” (p. 179). However, some methodologists have provided guidelines for selecting samples in qualitative studies based on the research design (e.g. case study, ethnography, phenomenology, grounded theory), sampling design (i.e. subgroup sampling design, nested sampling design), or data collection procedure (e.g. interview, focus group). In general, sample sizes in qualitative research should not be so small as to make it difficult to achieve data saturation, theoretical saturation, or informational redundancy. At the same time, the sample should not be so large that it is difficult to undertake a deep, case-oriented analysis (Sandelowski, 1995).

After consultation with Professor Muayyad Ahmed at the University of Jordan Faculty of Nursing, and Professor Yori Gedron at Brunel University, and after extensive reading on sample size, the author decided to estimate the sample size. Based on the formulation of 80% power, and effect size of 0.25 (Cohen, 1988; Pilot & Hungler, 1999), and for a significant level ($\alpha=0.05$), the estimated sample size arrived at was 60 nurses and 60 patients, calculated by the statistical power analysis programme (G*Power 3) for social, behavioural, and biomedical sciences (Faul et al., 2007). This sample was recruited from Site 1 and Site 2. Due to the shortage in the number of nurses working within the assigned trusts, and to maintain the

trustworthiness of the research, the total number of nurses that participated in the research was 28.

Based on the research strategy of collecting both qualitative and quantitative data at the same time, this sample size was used in both approaches (Creswell & Clark, 2007). I interviewed each participant patient/nurse on one occasion for up to one hour, and at the end of interview he/she rated the ESQ questionnaire. Although the quantitative components in mixed-method studies help to determine the sample for the qualitative component and generalise the qualitative findings, this role is rarely used in mixed-method studies; it is a role not widely used and one which researchers may wish to consider for more use (O’Cathain, Murphy & Nicholl, 2007).

There are ample illustrations of the use of the same calculated large sample size in concurrent triangulation designs. Capella-Santana (2003, cited in Creswell & Clark, 2007, p. 119) gathered quantitative questionnaire data from 90 undergraduate elementary education teacher candidates. She also invited all the 90 participants to be interviewed, “to corroborate the information obtained through the questionnaire” within the same one-phase interview (Creswell & Clark, 2007). Luzzo’s (1995, cited in Creswell & Clark, 2007, pp. 119–120) concurrent triangulation design had a quantitative sample of 401 students and qualitative sample of 128, of which 401 were students (Creswell & Clark, 2007).

3.10.8 Recruitment

The researcher having obtained ethical approval to conduct the study from the Ethics Committee at Brunel University, and the local National Health Service, carried out the research at two NHS Trusts in London.

3.10.8.1 Patient Recruitment

To enrol patients, an agreement was made with the cardiology ward nurse manager, CCU manager, and attending staff, to distribute the information sheet and consent form to patients who met the inclusion criteria. The researcher conducted the interviews 24–48 hours from the patient’s time of admission to the cardiology ward, since patients are considered more stable at that point, compared to their health status while they are in CCU (Cochran & Ganong, 1989; Cornock, 1998; Wong & Arthur, 2000; So & Chan, 2004; Biancofiore et al., 2005; Hweidi, 2005). This timing combated the “good patient syndrome”, in which patients inside CCUs avoid labelling items as “stressful” for fear of being perceived as complainers (Hweidi, 2005). Patients who gave written consent were interviewed on one occasion, at a convenient time and place, selected by the on-site supervisor, to talk about their experience and to rate the ESQ at the same time. Patients were interviewed at their bedside in the cardiology ward, except for two of the patients, who were interviewed in the family meeting room. The following is an example of questions that patient would be asked during the unstructured interview:

1. Can you tell me about your experience as a patient on a CCU, please?
2. Have you discussed your concerns with either a nurse or a doctor?
3. What type of support did you receive?
4. Who offered the support – a nurse or a doctor?

The patient's experience in the coronary care unit (CCU) is recognised as involving discomfort, and stress (Alasad & Ahmed, 2005; Hweidi, 2005; Gelinas, 2007). To elevate many of these stressors, and to allow patients to manage their stressors effectively, there should be initiation of conversation about their stress at an early stage of occurrence (Mohr, 2006). This study aimed to explore these discomforts, and to what extent they were covered by clinical guidelines, in an attempt to improve the quality of care for CCU patients. A counselling service was available for use by patients and during the study time. The researcher was available to discuss with patients their concerns and difficulties, and transferred the counselling role to the head nurse, in-charge nurse, or the nurse manager to be the first step in the discharge and follow-up programme for CCU patients. Additionally, this allowed CCU nurses to evaluate the health care service they provided.

3.10.8.2 Nurse Recruitment

I requested that the nurse managers of the CCU distribute the information sheet and consent form to nurses who met the inclusion criteria. Nurses who showed an interest, and gave their written consent, were interviewed at a convenient time and place selected by the nurse manager. Staff talked about patients' experience in the CCU and rated the ESQ from their own perspectives. Nurses mainly selected their break time to talk, and others kindly stayed for 30–45 minutes after their shift to take part in the study. Interviews were undertaken in the nurse manager's room or meeting room. The following is an example of some of the questions that were used in the interview:

1. Do you think the CCU is a stressful environment for patients? Can you identify any of these stressors?
2. What are the main stressors patients acknowledge?

3. Do you think physical (e.g. pain, sleep disturbance) or psychological (e.g. separation from family or lack of privacy) factors would be ranked as the highest stressors by patients?
4. Can you give me a case example, please?
5. Can you compare your work with patients in CCU with your work with patients in any other medical or surgical intensive care unit?

3.11 Data Analysis

3.11.1 Qualitative Data Analysis

Qualitative data were analysed using the methods of Giorgi (1985). The Giorgi method of analysis is used very widely in nursing research and the social sciences (Polit & Beck, 2004). Speziale and Carpenter (2007, p. 83) state the essential steps a Giorgi's (1985) method researcher should undertake:

- Read the entire description of the experience to get a sense of the whole.
- Reread the description.
- Identify the transition units of the experience.
- Clarify and elaborate the meaning by relating constituents to each other and to the whole
- Reflect on the constituents in the concrete language of the participants.
- Transform the concrete language into the language or concepts of science.
- Integrate and synthesise the insight into a descriptive structure of the meaning of the experience.

Giorgi (1997a, b, cited in Barrio et al., 2004) stated that: in the phenomenological method it is vital that the researchers should at all times use reduction and intuition

to bridge the gap between the facts described by the interviewees and the essential meaning of the lived experience.

3.11.1.1 Rationale for Selecting Giorgi's (1985) Analysis Method

The researcher's own experience in an ICU and based on the assumption of similarities in the humanisation of ICU and CCU patients, meant that dealing with patients diagnosed with a coronary condition or with nurses working in a demanding area like CCU, was found to be difficult. I found that it was not necessary to expand participant activities by returning the transcripts to them for validation, as insisted on by Giorgi (Polit & Beck, 2004). Giorgi's analytic approach was used, as it is a tried and tested method of data analysis, used in previous phenomenological research to explore patients' experiences in ICU (Barrio et al., 2004). Results were amply significant to explore the phenomena under study, to answer the research questions and to cover the objective of the research being conducted (Miles & Huberman, 1994; Polit & Beck, 2008).

3.11.1.2 Reliability and Validity Issues in Phenomenological Research

(Trustworthiness)

Reliability and validity are two areas where the criteria of logical empiricism appear to be imposed upon phenomenology as a research method (Giorgi, 1989; Beck, Keddy & Cohen, 1994). Cross-paradigmatic communication can result in difficulties, because the same words may have a different meaning. It cannot be assumed that reliability and validity have the same meaning in logical empiricism and phenomenology. In order to help clarify reliability and validity from the phenomenological perspective, Colaizzi, Giorgi, and van Kamm's methodologies

were compared and contrasted regarding their stance on these issues (Beck et al., 1994).

Giorgi (1988) purports that because of their intentionality; meaning is intuited by the investigator to transcend his/her consciousness. These meanings are not necessarily conscious; therefore, it is not essential to check and see if the same meanings arise in another person's consciousness. If the intuited meanings are instead for one's consciousness alone, then the meanings can be for another as well (Beck, Keddy & Cohen, 1994).

Giorgi (1988) concludes that validity, in a phenomenological sense, has been achieved if the essential description of the phenomenon truly captures the intuited essence. Reduction is the reason that no additional empirical judges are required. No reality claims are being made. Instead, every reader of the phenomenological research study becomes a critical evaluator of the investigator's essential intuition.

Reliability is observed when one can use this essential description consistently (Beck, Keddy & Cohen, 1994). According to Giorgi (1988), a strong knowledge claim is based on a researcher having taken all the precautions in attempting to arrive at an accurate description, such as reduction and imaginative variation. Giorgi (1989) summarised his stance on validity as:

“A temporary unfolding process that possesses a certain quality that happens to individual. The theory is that if it can happen to one individual, it certainly must be able to take place in another and so each reader is invited to participate in the process. This strategy is in stark contrast to the empirical strategy of using judges whereby no one can articulate how any one of the judges, or the researcher him or herself, arrived at the facts they did. In addition, there is the possibility that while all may agree, they could all be wrong in the same way. Thus, the phenomenological approach stresses the objective identity achievements constituted by the subjectivity of the researcher within the reduction which can be descriptively expressed. The use of reduction which one assumes at the

beginning of the analysis and the unfolding nature of the process of achieving identity reflect the holistic approach of phenomenology as opposed to the more linear strictly empirical process.”
(Giorgi, 1989, p. 84)

From a phenomenological perspective, Giorgi also argues against use of the participants in a research study as validators of the findings (Beck, Keddy & Cohen, 1994).

For van Kaam, reliability and validity approaches by means of controlled explication. He refers to controlled explication as being of the utmost importance in phenomenological research. Through explication, implicit awareness of a complex phenomenon is made explicit (van Kaam, 1966). In van Kaam’s phenomenological analysis, a researcher selects expert judges to review his/her analysis. What is kept is only the analysis that is consensually validated. Giorgi argues that this operation of review by expert judges emphasises the factual achievements, for example whether the themes itemised under a category fit the category. Giorgi claims this step is outside of the phenomenological framework which emphasises essential meaning with use of free imaginative variations (Beck, Keddy & Cohen, 1994).

Phenomenology, according to Colaizzi (1978), calls for dialogal research because encounters occur only in dialogue, “*dialogue research uncovers presuppositions most fruitfully*” (Colaizzi, 1978, p. 69). In this type of research the investigator needs to be dialogally conversant with his/her subjects at some points in the research. Colaizzi (1978) does not call for expert judges to validate the steps of his analysis as van Kaam (1966) does. Based on his view of participants as co-researchers, Colaizzi, on the other hand, stresses validation of the exhaustive

description of the phenomena under study by the participants themselves (Beck, 1994).

In conclusion, Giorgi (1988) has raised the question of whether we should still use these terms of reliability and validity in phenomenology. He proposes that the minimum that should be done is to put the term phenomenological before them (Beck, Keddy & Cohen, 1994). In fact the discourse of Colaizzi, Giorgi, and van Kaam assumes the same perspectives of positivism, except that the terminology has changed somewhat. The old argument about validity and reliability, between qualitative and quantitative inquiries are cut from the same kind of cloth; only the colours have been changed (Beck, Keddy & Cohen, 1994). Guba (1981) and Guba and Lincoln (1994) answered Giorgi's question by identifying the following terms that describe operational techniques supporting the rigour in qualitative inquiry: credibility, dependability, confirmability, and transferability (Beck, Keddy & Cohen, 1994; Miles & Huberman, 1994; Spetziale & Carpenter, 2007).

Guba and Lincoln (1981) stated that while all research must have "truth value", "applicability", "consistency", and "neutrality" in order to be considered worthwhile, the nature of knowledge within the rationalistic (or quantitative) paradigm is different from the knowledge in naturalistic (qualitative) paradigm. Consequently, each paradigm requires paradigm-specific criteria for addressing "rigour" or "trustworthiness". They noted that, within the rationalistic paradigm, the criteria to reach the goal of rigor are internal validity, external validity, reliability, and objectivity. On the other hand, they proposed that the criteria in the qualitative paradigm to ensure "trustworthiness" are credibility, dependability, transferability, and confirmability (Lincoln & Guba, 1985). They recommended specific strategies

to be used to attain trustworthiness such as triangulation (Polit & Beck, 2008), prolonged engagement and persistent observation, negative cases, peer debriefing, audit trials and member checks (Guba & Lincoln, 1981; Polit & Beck, 2004). Also important were characteristics of the investigator, who must be responsive and adaptable to changing circumstances, holistic, having professional immediacy, sensitivity, and ability for clarification and summarisation (Guba & Lincoln, 1981).

Although Giorgi's (1985) views that it is inappropriate either to return to participants or to use external judges for reliability and validity (Giorgi, 1985, cited in Polit & Beck, 2008, p. 519); in this project the researcher used all the efforts to assess "truth value" (Polit & Beck, 2004) and to maintain rigour or goodness in qualitative research (Spetziale & Carpenter, 2007).

Credibility refers to confidence in the truth of the data and their interpretation. Lincoln and Guba (1985) pointed out that credibility involves two aspects: first, carrying out the study in a way that enhances the believability of the findings, and second, taking steps to demonstrate credibility to consumers (Polit & Beck, 2004). In this project the researcher maintained credibility through multiple triangulations (data triangulation). Data triangulation includes three main types: time triangulation which involves collecting data on the same phenomenon in different points in time (Polit & Beck, 2004). Data were collected at any time of the day and at different times of the year according to participants' availability and time frame of one-year data collection. The data triangulation credibility was maintained also through space triangulation and this was through conducting data from three assigned hospitals. The third data triangulation is person triangulation which was maintained through

collecting data from two main participants (CCU patients and CCU nurses) with different characteristics (age, gender, educational level, etc.).

The second criterion used to assess trustworthiness in qualitative data is dependability which reflects whether the process of the study is consistent, reasonably stable over time and a cross methods (Miles & Huberman, 1994; Polit & Beck, 2008). This was met with the third trustworthiness criterion “confirmability” through the inquiry audit in which I considered my research supervisors as external reviewers (Polit & Beck, 2004). Both supervisors reflected on whether the participants’ narratives reflected the themes retrieved from Giorgi’s method of analysis. On the other hand, reading the transcripts many times and listening to digital recordings more than two times was sufficient to maintain confirmability of the data (Weber, 1985).

The fourth criterion for trustworthiness is transferability or the generalisability of data (Polit & Beck, 2004). This was maintained through using the quantitative approach: estimating a sample size and using the random criterion purposive sample (Lincoln & Guba, 1985; Tashakkori & Teddlie, 2003).

3.11.2 Quantitative Data Analysis

All descriptive statistics were computed using the Statistical Package for the Social Sciences (SPSS, version 16) (personal computer) preliminary data analysis included descriptive statistics to describe the study sample via means, standard deviation, and frequency. I used the descriptive statistics rather than the significance and correlation statistics for several reasons: (1) one of the main characteristics of the descriptive data analysis is that the simultaneous judgement of the resulting effect differs both from the numerical estimation and inferential point of view. At each of

the, say L, locations of interest (variable / time point combinations) there will be point estimates of the unknown true effect differences (Abt, 1987). (2) Descriptive statistics were sufficient to answer the current research questions and to build research hypothesis (Polit & Beck, 2004). (3) There is inconsistency in the data (SPSS 13); I did not collect data from patients and nurses giving the care to the patients at the same time. Data were collected from CCU patients and nurses, who met the inclusion/exclusion criteria, from the three hospital shifts and within a period of one year.

3.12 Expected Outcome

This study aims to: (1) identify the CCU stressors that a patient may experience during his/her stay in CCU; (2) explore nurses' perceptions of patients' stressors; (3) the effect of their socio-demographic characteristics on the level of perception of both participants (patients and nurses); (4) discover the type of coronary care nurse needed in future; and (5) explore if the available CCU guidelines suit and cover CCU patients.

3.13 Site and Settings

The research took place in two trusts presented in this research as Site (1) and Site (2). Site (1) CCU consists of six beds and is served by 28 nurses (27 staff nurses and one nurse manager) distributed in three shifts. Site (2) consists of two separate CCUs. Each CCU consists of six beds and both CCUs are served by 32 nurses (30 staff nurses and two CCU managers). All the coming data are retrieved from:

- <http://www.thh.nhs.uk/>
- <http://www.nwlh.nhs.uk/index.cfm>

3.13.1 Site (1) – NHS Trust

Site (1) (NHS Trust) has an annual budget of over £169 million and employs over 2,400 members of staff working to deliver high quality health care to the residents of Site (1) which serves a total catchment population of over 350,000 people.

The hospital aims to provide high quality emergency and specialist patient-focused care which is accessible and responsive. This care is delivered by skilled and motivated staff, in conjunction with partners in the local community to promote dignity, choice and good health. Their principal aims are to:

- Provide the best possible care, cure and comfort to the local community
- Recognise the dignity and rights of each person and their individual needs
- Promote good health and prevent sickness

Site (1) Trust Objectives

Vision: To be the best general hospital in the country.

We will achieve our vision through providing excellence in:

- Treatment and care which is sensitive and responsive to the individual
- Recruiting, retaining and developing our staff
- Relationships with the people we serve and those with whom we work
- Innovation and improvement
- Financial stewardship

3.13.2 Site (2) – NHS Trust

They care for more than half a million people living across Site (2) making it one of the biggest and busiest NHS Trusts in the capital. Site (2) hospitals provide a full range of services including a £19 million refurbished maternity unit, new paediatric

A&E and maxillofacial unit. The site employs 4,200 doctors, nurses, therapists, scientists and other health professionals as well as administrative and support staff, making it one of the biggest employers locally. It is a major centre for undergraduate and postgraduate education – teaching many nurses, doctors and other health professionals each year.

Achievements in 2009/2010

- We were awarded **excellent** for the quality of services in 2008/2009 by the Care Quality Commission, putting us in the top 20% of NHS Trusts in the country.
- **Reduced infections**, beating national targets. The number of cases of MRSA fell by 43% and cases of *Clostridium difficile* fell by 42% in 2009/2010.
- **Ensured mortality rates are below the national average**. And we made headlines after our research on how treatment checklists had improved death rates was published in the prestigious *British Medical Journal* (BMJ).
- **Provided quicker access to treatment** – patients were treated within 18 weeks and in the majority of cases, even quicker. In our A&E departments, patients were seen within four hours.

Trust among best in country for clinical excellence

14 October 2009

NHS Trust Site (2) has achieved the highest possible performance rating for its quality of services in the 2008/2009 Care Quality Commission annual national assessment report, published this week.

Trust Site (2) has an excellent rating for the quality of services it provides for its local population. This is a major improvement on last year, when its performance on quality was fair. The year before this was good.

The trust still scores weak for financial management, which relates to long-standing budget problems. However, the CQC acknowledges that improvements have been made in this area.

The quality of services score is based on three components: meeting core standards, which the trust has “fully met”; existing commitments, which the trust has also “fully met”; and national priorities, where the trust achieves “excellent”. Across England, just over 20% of trusts have achieved an excellent score for quality of services.

The trust is compliant with all the 44 factors under seven key areas making up the Department of Health’s core standards, ranging from safety and cost-effectiveness to patient focus and care, environment and amenities.

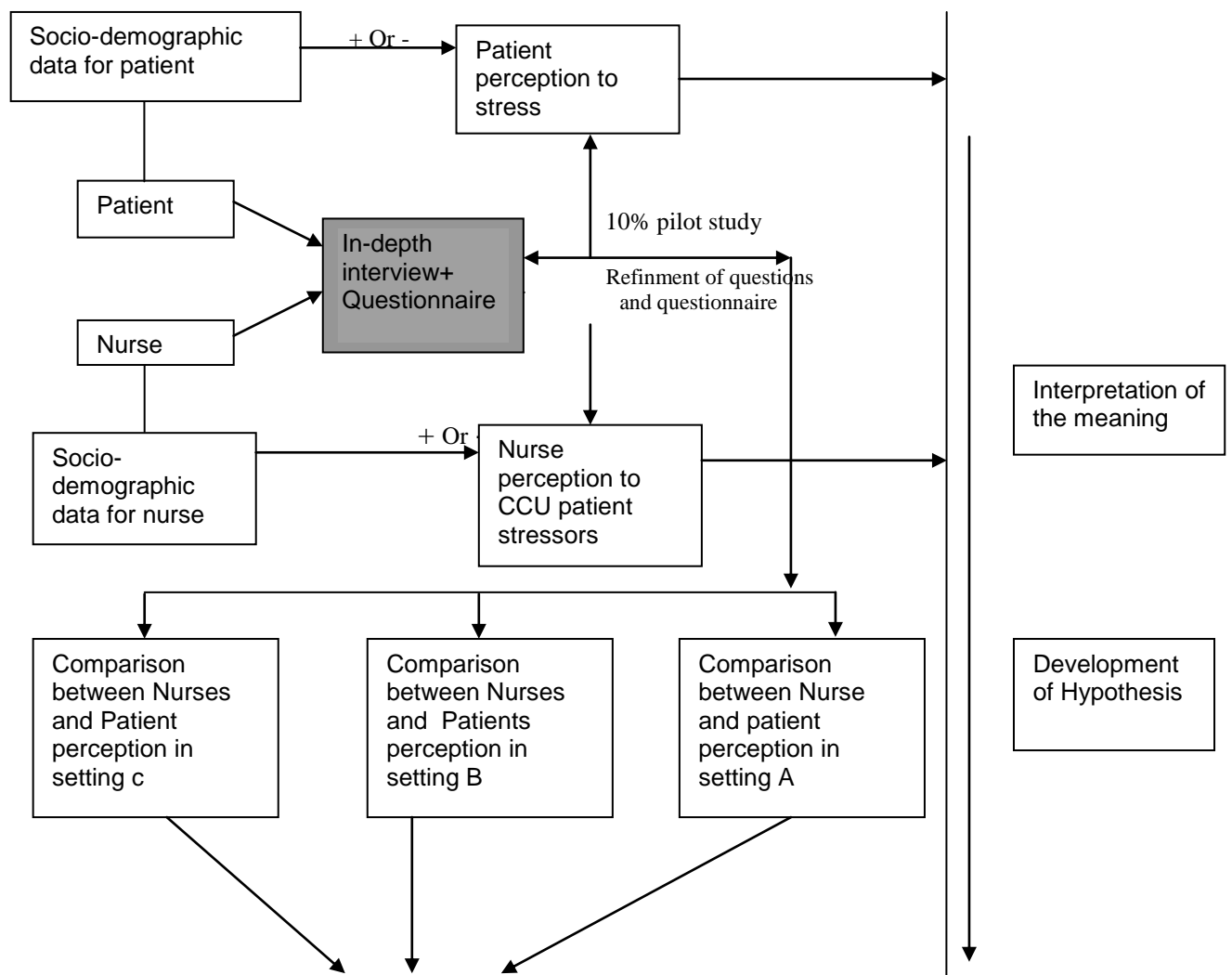
Chief Executive of the trust, Fiona Wise, said: “This brilliant achievement is a tribute to all our hard-working staff who have pulled out all the stops to make sure that our patients receive the very best clinical services. I am delighted to see that recognised by the national body that inspects and monitors all the hospitals in England.

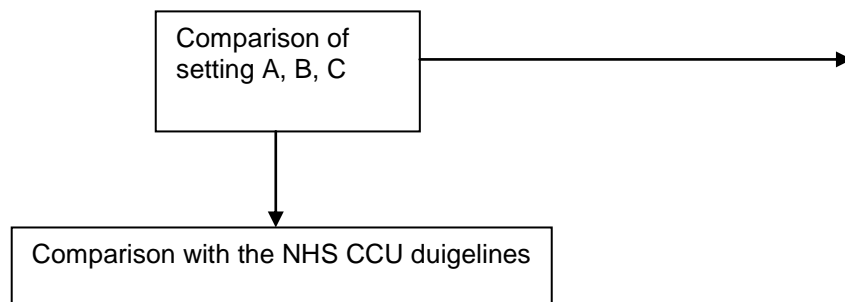
“I am sure that local people will agree with the Care Quality Commission and the achievement is that much more welcome because this is the last year in which this system of rating will be used.”

3.14 Study Budget

My research is funded by a PhD scholarship from the government of Yemen and all the research expenses were covered from the researcher's monthly allowance.

3.15. Study Framework





CHAPTER 4: QUALITATIVE FINDINGS

4.1. Introduction

This chapter represents the open-ended, in-depth interview results, discussion and conclusion of patients experience in CCU from patients and nurses perspectives. Interviews which were digitally recorded were analyzed using Giorgi's (1985) thematic analysis as described in chapter-three section (3.10.1) of the study.

As being the researcher of this study, I have no past nursing research experience of managing patients in a CCU setting and therefore had no preconceived ideas about the experience of patients who were treated for coronary heart disease whilst in the CCU. However, I did recognise and appreciate that patients would have experiences, both negative and positive, that they should be able to recall and about which they can provide insight to share with me as the author of this study.

From the data analysis two main themes were formulated patients perceptions of their experience in a CCU experience and nurses' perceptions of patients experience

in CCU. As prescribed in the methodology chapter participants' (patients and nurses) data were coded to maintain privacy of participants. Subthemes were formed from the patients' and nurses' narratives.

Results

4.2. Patients' perceptions of CCU experience

The first main theme retrieved from the analysis related to patients' perception of CCU stressors. After obtaining approval to conduct the study the researcher started to allocate patients who met the inclusion criteria as prescribed in chapter three. Patients who gave their written consent were interviewed 24-48 hours from their time of admission to the cardiology ward since patients were considered to be more stable compared to their health status when they arrived in CCU (Cochran & Ganong, 1989; Cornock, 1998; Wong & Arthur, 2000; So & Chan, 2004; Biancofiore et al., 2005; Hweidi, 2005). This time period will combat the good patient syndrome in which patients inside CCUs avoid labelling items as stressful for fear of being perceived as complainers (Hweidi, 2005).

The total 60 patients, 30 males and 30 females, who gave consent, were asked to answer the following general questions (Box 4.1):

1. Can you tell me about your experience as a patient in CCU, please?
2. Have you discussed your concerns with either a nurse or a doctor?
3. What type of support did you receive? Who offered the support, a nurse or a doctor?

Some questions were initiated during the interview with patients in an attempt to give more in-depth explanation for the stress phenomenon:

1. What caused those stressors?
2. Why didn't you express your concerns to the medical staff?
3. If the medical team didn't offer support then how did you manage to cope with stress?
4. Do you prefer the single or the multi-occupied CCU design?
5. As this is the second time you have been admitted to a CCU how did you perceive the experience this time? [This question was used for the 29 patients who had experienced previous admission to a CCU].

The four main subthemes that emerged from patients' responses were memory recall, stressors, coping strategies, and caring behaviour from nurses (Diagram 4.1.).

When patients were asked about the stressors they experienced during their CCU stay, five subthemes emerged (anxiety, sleep, visiting schedule, pain, and CCU design). And when asked how they managed these stressors three subthemes emerged from the data (seeking information, seeking social support, reliance on cultural beliefs/practices and religion).

4.2.1. Memory recall towards CCU

The first subtheme to emerge from patients' perception of their experience in a CCU was memory recall. The results in relation to the memory recall of a patient's stay in a CCU concur with the researcher's presumptions as all the patients could relate at least some of their experiences of what had happened to them whilst in CCU, but within this research 10 of the patients expressed that they were drowsy and tired during the day and their memories were vague but gradually improved after one to two days following discharge from the CCU. Most of the patients could recall

details from day 2 onwards. They could give a detailed description of the personnel and activities in CCU. One patient could recall the nickname of the nurses who had cared for her.

"I used to be drowsy on the day they transferred me to ward but today [48 hours from time of transfer to the cardiology ward] I can remember the place and people in CCU"

Patient STW

"Its good you interviewed me today as I can tell everything know"

Patient GMF

One patient was completely unaware of what happened and was only aware of his behaviour after being told by his family members and the nursing staff.

I have been told by my wife that I was drowsy all the time or...not fully conscious about the treatment and even the visitors attending

Patient CWD

Patients' memory recall of the CCU experience varied according to the number of admissions to the CCU. Patients who were admitted for the first time to a CCU felt that the experience was more terrifying and stressful compared to patients who have previously been admitted to a CCU.

"It's a terrifying experience starting from the ambulance and ending up in the cardiology ward....ah, no one to tell you what is going on"

Patient MAF

"It's a real stressful place. It's full of advanced technological equipment to help us."

Patient YAF

"I called the nurse to put the oxygen mask like the previous time and I felt familiar with the place".

Patient SKM

"I have been told in the emergency department that I will be transferred to CCU and I said. Isn't that same one on the 7th floor as I knew the staff there. I used to be a patient one year back."

Patient FAM

4.2.2. Stressors

When patients recalled their experience in CCU the following stressors were perceived to be the most concerning during their stay. Most of the patients experienced stressors related to anxiety, pain, visiting schedule, sleep, and the CCU design. The cause of stressor varied among patient groups according to their needs and socio-demographic characteristics.

4.2.2.1. Anxiety

Patients acknowledged that their psychological concerns and developed anxiety were not only due to their fears, uncertainty, suddenness and outcome of disease, inability to fulfil family needs, but arose from lack of information from doctors and nurses. As a nurse with ICU experience and the author of this study, this wasn't surprising as it's a normal concern that could rise from a cardiac condition. Patients below the age of 55 years with no previous history of CCU admission experienced a high level of stress. This was illustrated by some of the participants below the age of 55 years:

"I was terribly frightened. Yeah...when I found my self collapsed lying on the toilet. Um... um... this event happened so suddenly... I didn't know what to do. My memory was quite messy."

Patient YAF

"I was driving when I had a bad heavy sensation in my chest followed with pain in my shoulder.....oh' I don't know how I can describe how bad it

become I was able to pull over to the side of the road and I asked the help of the passing lady in the road....very hard to remember."

Patient MAF

"Er...the doctor told me... that I have an ischemic heart disease..... they will perform angiography first and then I might be in need for an open heart operation.....I felt I might die at any time".

Patient AJM

Another patient expressed his fears when thinking about the current condition:

I called a nurse and asked her to give me an oxygen mask; I felt I lost my breath....oh my God I felt everything was moving around me.

Patients QAM, JJF

Fear was generally described as their first reaction when patients realised that they were severely ill and had been admitted to a CCU. Two participants' said:

"Um... um... I was so scared. The most terrible news was that I would be then transferred to the CCU. At this moment, I started to worry about my condition. I didn't believe it.... I asked the nurse to say again. I didn't expect I would be so severely ill.

Patient TTM

"At the emergency department they told me I will be admitted to CCU for cardiac evaluation...no one could believe it, I felt they were saying 'Sorry sir, you are dying' but in a polite way"

Patient WKT

A patient aged above 55 years felt uncertain about the outcome of disease. One patient aged 56 years had a previous ischemic attack and expressed the second one as fear of the consequences:

"When I had the first attack and it passed safely without complications I was told that owing to my age, if a second attack were to occur again, this could have a bad prognosis and I'm scared of this."

Patient SLM

Eight younger female participants (aged 35-45 years) described how they were worried about the lack of care they were providing to family members at home:

"The other stress is about the lack of care of my daughter. She is only seven years old. I said to my husband that I'm worried that no one is taking care of my daughter during the daytime. I am extremely scared. Er... nobody teaches and supervises her homework."

Patient RGF

"I hope I won't be in the CCU for too lon.. My children are still too small to care for themselves."

Patient SLT

"My mother is caring for my three-years old baby. But my mum needs someone to care for her; she is very old. I don't know how she will manage."

Patient GGF

"I don't know how long I will stay here.....oh ... I don't know how my husband will manage to fulfil his working needs and the kids' needs...I'm always taking care of everything and he deosn't know how to do any thing at home."

Patient STF

Some participants also described their feelings of guilt about not caring for their health. This added to their anxiety. A participant illustrated their feelings saying:

"I blamed myself... as I had a chest pain recently and sometimes shortness of breath and I didn't take my wife and friends' advice to visit a doctor"

Patient PMG

"I'm guilty. Uh...doctors told me to stop smoking as it will worsen my condition but didn't listen and now I will be operated on"

Patient NMM

Six patients described their anxiety to be related to medical staff (nurses and doctors). This was also found with the younger patients. One participant said:

'When I asked the nurse about my condition her answers didn't show certainty about what's going on and when I asked for more details she said I should wait for the doctor ... The surprise was that I had to wait for six hours for the doctor to come... I was already loosing my temper....oh.... .before the doctor came, my heart was pounding very hard. Mm... I got short of breath and dizzy. Alas... when I thought of about my wife or family... I became worse. When I heard a phone ringing during the CCU stay.... I thought they will be talking about me"

Patient NMM

The nurse kept coming and going and she didn't bother to introduce her self.

Patient SWH

"I kept waiting for someone to tell me what was going on."

Patient SMF

"The doctor was in a hurry. He told me that I had a myocardial infarction. The problem was: what is this term myocardial infarctio? Even the explanation was difficult to be understand"

Patient SGG

Patients in this study showed contradictory reactions towards CCU admission. Patients who were transferred from an emergency department to the CCU without CCU orientation did not understand the reason for their CCU admission and perceived the experience to be stressful while patients previously admitted to a CCU made use of their previous knowledge and experiences to perceive the reasons for

their CCU admission. Patients admitted for the first time expected that the CCU only catered for critically ill patients and worried about their own condition. They believed that the CCU was a busy and stressful environment, that the health care providers were always rushed and involved in resuscitation procedures, and that the patients were critically ill and were surrounded with life-support devices. However, the informants' experiences differed from their expectations. They noted that the patients were not as ill as expected and the nurses and the doctors were not in a hurry. The atmosphere was relaxed and the informants' stress decreased after being admitted into the CCU. One patient explained his perception before and after CCU admission:

"The condition of the new patient seemed.... not seriously ill and the nurses were not stressed and not very tense. All [nurses] showed hospitality and concern [for the patient]. [They] were not wearing caps, or shoe covers. It's the psychological effect. I heard before that CCU was a very serious place, nurses wore caps and shoe covers ... They did not wear these ... because of this I was not frightened".

Patient NJM

Six patients below the age of 55 years old (of which two were females) expressed the anxiety they felt when they had been transferred to the ward. The anxiety was related to a feeling of being neglected in the ward as they felt they wouldn't get the same attention and care that they received in the CUU. One of the patients commented:

"When I was told that I will be transferred to the ward I became very happy as I will be able to see my family more frequent, but after that when I was been transferred it became worse as I went for hours without medical attendance and I could not see the nurses like in the CCU they were very far from me."

Patient MNJ

Although, patients with no history of previous admission to a CCU expressed anxiety stressors, patients with previous admission history to a CCU expressed different feelings. They were neither scared nor frightened by the environment. They felt secure and safe because many nurses, doctors and equipment and monitors were around them. They expressed that all the personnel and equipment were helping them. When comparing their previous experience in a CCU with their recent one, patients said:

The first time was like a scary movie but the second time I felt like I was at home."

Patient SKM

"When the ambulance took me to hospital I was scared to be admitted to a place other than the CCU. I'm familiar with the place and staff ther."

Patient MKF

Another four younger patients stated about the equipment in CCU:

"Its good to have advanced equipment around you the point is do we have qualified people to use it."

Patients RGF, STF, HGM

4.2.2.2. Sleep

With the busy environment, numerous doctors and nurses, paramedical staff, monitors and equipment, noise is inevitable. Some patients were used to the noisy environment and they could sleep. From my experience of working in ICUs, I do not recall any reliable tool to evaluate sleep such as a rating scale for the need to sleep and nurses relay on what patients is calling for to evaluate sleep. Actually patients who were able to sleep were old and had hearing problems, but the most significant and disturbing aspects were the sudden loud noise and the concerns over

the results of disease. These were perceived by 33 patients. The monitor's noise was well accepted. One patient aged 38 years stated that his insomnia was caused by "passers-by" and he wondered why so many people came through the unit.

"Many people were attending to my bed side... like you are in a bus stop and there are passersby...oh my God I could not recognise doctors from nurses from students I even wasn't happy with the visitors when they attend.

Patient FAM

Another patient aged 42 years stated

"I can't differentiate between day and night. The whole day you can hear many people talking in this place, it's really crowded."

Patient NJM

One patient complained of noise from dropping objects which prevented him from sleeping or resting. He could not tolerate the noise and requested to be transferred to a general ward. He believed that the noise could disturb other people as well. He was frightened:

"...dropping noise happened frequently, with a 'bang bang', the object was dropped again. This happened frequently, there was noise for the whole day ... dropping objects on the ground. There were other noises too, sometimes conversation, but frequently the dropping noise was the loudest. Sometimes, I wanted to rest and I was just starting to fall asleep, then 'bang bang' again and I woke up ... so frequent, I did not know what was happening ... Noise from machines could be accepted, I could recognise the machine sound and I knew where it came from."

Patient AJM

Female patients prefer the closed rooms to reduce noise:

"It's a funny place it reminds me of the delivery room even though the delivery room is much wider than this...in the delivery room you understand

the noise... it is accepted as females are in severe pain but the noise in this CCU is not understandable."

Patient LMF

Other patients highlighted that the reason for the lack of sleep can be related to their psychological concerns.

"Thinking of my wife and kids affected my sleep."

Patient SLT

"Thinking of my disease and the outcomes obstruct sleeping at night."

Patient SMF, SGG

4.2.2.3 Visiting schedule

From my experience in ICUs visiting times have always been a topic of argument between patients and staff, and staff and organisations. All except six of the patients expressed that the two hours allocated to visiting wasn't enough for them. They did not expect family members to stay for long, but the time available needed to be flexible. For the assigned hospital area, people are very busy; they have to work hard in order to earn a living, and some people need to continue to study after work. Six patients didn't want their relatives to stay and disturb the work of the health care providers. But they appreciated visits, for example:

"I feel good about visits from friends and family, for example, friends come and visit me but I know their working schedules are busy and hard and visiting will be an extra obligation to those friends."

Patient SKM1-M (55 years)

"They [family member] help to clean my body, my daughter-in-law cleans my body, tidies my bed, says a few comforting words. Everybody says that my son comes every night, no matter how late it is this makes me feel comfortable."

Patients ARM, SAF

The other six patients who did not like visiting hours were either widows or living alone and normally they did not have many visitors or enquiries about their health.

“I wish they can make the visiting in CCU each alternative day to reduce noise... the place is like a ‘bazaar’... different languages and a lot of noise.”

Patient SSM

“No difference to be one hour or the whole day, I don’t have any one to visit me as I’m alone in this country.”

Patient LMF

4.2.2.4 Pain

As the majority of patients were admitted as a consequence of angina or a myocardial infarctions pain is often the main concern for both patients and nurses. Within the CCU, pain is a key individual in the entire health team. Six of the patients said that they did not feel pain when they kept still, but with movement such as coughing, moving, and turning, pain is increased. Of the 60 patients, 33 experienced moderate to severe pain. One patient thought that the nurses did not understand pain and suffering and forced him to do coughing exercises. Patients not only suffered from chest pain, 10 patients suffered from back pain and needed to be massaged with oil and repositioned with pillows before they could sleep. Two Asian patients, one male and one female, expressed their back pain as follows:

“I wished that they could have an oil massage session for my back.”

Patients MAM, WSM

Twelve patients were satisfied with the pain control offered by nurses, especially at bed time. They felt good with it. Most of these patients were above the age of 55 years, and five had hearing problems:

“When I’m sleeping I’m don’t hear anything, it looks they are giving good sleeping pills in this place... but also at home when I fall asleep I cannot get up easily.”

Patient VPF

“I like the people in this place; they gave me a good tablet at night which relieved my back pain and made me fall in sleep till the next morning.”

Patient MAF

Findings indicate that the age of the patients may correlate with the level of pain or the development of unexplained sensations. Patients aged less than 45 years were more demanding. Patients expressed somatic pain to be most likely related to disease, neck pain, back pain and pain from the attached needles and lines. The most interesting point is that young patients were the most likely to relate pain to anxiety and other psychological concerns. Most of the young patients’ causes of pain related to psychological consequences such as light used in the CCU during the night, levels of noise, separation from family, being unable to fulfil family roles, and financial worries. These factors contributed to insomnia which may have been the cause of somatic pain during the day.

“I can’t say that what I felt was pain... because it differs from the chest pain I had when I was admitted to the CCU... I had this strange discomfort when I was unable to sleep or when I was awakened by sudden noise.”

Patient IOF

“I had pain in my neck because I kept staring at the ceiling thinking of my wife and children; also the pillow was not comfortable.”

Patient UPF

“I told the nurse on the night shift that I was unable to sleep and asked if she could give me any other solution. She said that I had my pills already and I should be able to sleep... I was thinking the whole night and listening to staff chat.”

Patient WSF

“I had pain from the intravenous line... I couldn't feel my hand because I couldn't move it as I was scared of the needle... I was like that for 24 hours till a nurse told me it's a flexible needle and I can move my hand as long as I move it carefully.”

Patient WKT

“...I was awake the whole night... they informed me they couldn't give me sick leave and I'm scared they will cut off my salary... I couldn't sleep thinking of that and in the morning I had pain everywhere in my body.”

Patient HGM

4.2.2.5 CCU Design

I have work experience in ICUs with different designs and therefore could not estimate patients' actual preference for an open- or single-occupancy design. One of the questions the researcher asked patients during the interview was if they preferred a single room or the open plan design of CCU. The responses varied as each patient was looking for something different in each design. Despite the noise and disturbance caused by the surrounding environment, 10 out of 18 patients aged 55 years and above showed an interest in an open plan CCU as they felt it was easier to call attending staff for help. They were concerned about the safety aspect more than privacy and a quiet environment. They could see what was happening around them. They could easily get the attention of the nursing staff whenever they needed help. Moreover, they thought that it was easier to allocate the manpower and allowed better observation of patients.

“Rooms are no good, I like to look at the environment, look at others. When people come, I can call them. Inside a room with closed doors, nothing can be seen... I can help other people to call for help as well. If I were inside the room, I could not help them.”

Patient MMF

“It’s easy to call the nurse in this way.”

Patient NGF

“...sometimes I open the curtains and they understand that I need help... shaking curtains is like a bill for me.”

Patient JSM

“I like the open design... I was in the bed next to the door and everyone who entered would smile at me which gave me a sense of being alive.”

Patient TDM

The highest majority of patients who asked for single, separate rooms were females of varying ages. They stated that they were looking for privacy to be able to sleep comfortably.

“I’m scared to be exposed during sleep as the dress is not that very good...”

Patient RGF

“There should be separation between males and females... sometimes when the nurse attends the neighbouring patient the curtains opened accidentally and patients were exposed... this happened many times.”

Patient DVP

“Once I witnessed the bed-making and changing gown process of the female patient in the bed next to mine... When they came to perform the same work on my bed side I refused... I don’t want to be the life movie of the next bed when curtains move... there should be a single room for each patient for privacy.”

Patient WSM

*“...it’s good to have a single room to have the family and to have television...
I can’t sleep without watching television.”*

Patient STF

Others showed no interest in any of the CCU designs, as it did not matter to them whether they were nursed in a single room or in an open plan ward.

“What is the difference to be in single or open CCU... if it’s going to improve the condition I have I will select something... And what will be the difference? They should give good care for both types of designs.”

Patient SEM

“I used to be admitted to a single room CCU in another country (Asian) and I found them the same.”

Patient TLM

“A single room is good if you have a television or if they allow for more visiting hours, otherwise leave it as it is... I have a daily chat with [the person in] the next bed.”

Patient PJM

“It makes no difference to have a single room or not; the point is to have good health care delivery and someone to answer your call when you need them.”

Patient VBF

4.2.3 Coping Strategies

With respect to my preconceived assumptions of how patients cope with stress, the results were surprising and different from the culture the researcher was acquainted with. The Middle East culture, where the researcher came from young and older adults relies on cultural beliefs and religion to cope with stress rather than trying to

understand the exact course of disease and its consequence. They also depend on family and friends and benefit from their experience to cope with stress and the current disease condition. The coping strategies described by participants to manage the stressors created with CCU admission include a range of activities. The major subthemes to emerge from the data included seeking information, seeking support, reliance on cultural beliefs and practices and turning to religious beliefs. Adopting a coping strategy varied according to the patient's age, ethnicity and educational level. Patients below the age of 55 years with bachelor degrees and/or another high level of education were more realistic and used knowledge and information from health professionals and friends to cope with stress. Whereas patients aged above 55 years relied on their cultural backgrounds to cope with the stress associated with admission to a CCU.

4.2.3.1 Seeking Information

Seeking information was the most common strategy to emerge with most participants describing how they found seeking information as one of the most effective coping strategies to reduce their stressors. From my experience in ICUs it was found that patients constantly ask questions related to their health state in order to secure their families' and their own future. Patients in one shift may ask a lot of questions and these questions will be repeated to doctors and nurses. Patients not only sought information from health care professionals, but from the Internet too. Twenty patients perceived that health care professionals were seen as an important source of information. They described how being well informed by health care professionals about their progress and treatment reduced their levels of stress anxiety.

“Hmm... during my stay in [the] CCU, the attending nurse provided me with the latest information of my health condition. They really reduced my doubts and uncertainty.”

Patient DVF

“Each time I ask the nurse a question she will answer me... she is always there.”

Patient QAM

“I remember once I asked the nurse that I would like to talk to the doctor and she called him and spoke to me through the phone and assured me. When he came for the round he answered all my questions and cleared my doubts.”

Patient PJM

“Nurses told me each single detail related to my treatment even when I didn’t ask.”

Patient QAM

The second method of how patients sought information was from the use of the Internet. Some participants described this as an alternative coping strategy. This coping method was applied more by educated patients and patients who have Internet access. They described how they were keen to obtain a better understanding of the causes of disease affecting them. They also described their satisfaction with the information acquired from websites with one patient saying:

“Um... um... I tried to seek some information about acute myocardial infarction from the mobile Internet [that] enriched my understanding about my condition with that which the health care professionals had told me. Hmm... I felt more secure. It indeed reduced my worry.”

Patient DVF

“I told my son to search on the web about my disease and give me a printout at the evening visit... Oh! I had to be patient with my lazy son but the experience enriched my knowledge and gave me hope of a good prognosis from the treatment with Percutaneous Transluminal Angiography (PTCA).”

Patient NMM

“I work in the field of information technology and I found it was time to use my Internet skills to know about my condition.”

Patient GGF

4.2.3.2 Seeking Social Support

From my experience, calling on the family to support the patient is a normal reaction to anyone under pressure or scared of the consequences of cardiac disease. Within the Middle East culture (the researcher culture); people came from extended families where the family and friends acts like one hand, gather and share emotions and information's all the time. Individual's within the Middle East cultures depends on each other in health and sickness. And while I was working in the hospital at home country I found patient all the time calling for family and friends to sought information, even they will call family to talk to medical team rather than doing that by them self's.

Seeking support from family members was the second coping strategy that emerged from data collected with regards to the management of CCU stressors. Participants identified that the contribution of both emotional support and instrumental support would help in coping with stress. Four younger patients, who were in paid employment outside the home, described how their new roles and additional responsibilities had affected their health both psychologically and physically and how dependent they were on their family members to support them through this time. One patient said:

“Hmm... my brother and sister alternately come to my house... helping my family to do some household work... and counselling me when I am depressed and grief-stricken. I feel less lonely. Also they do their utmost to visit my children instead of me...”

The participants mainly sought support in their closest social environments the family. They said that:

“The family was the only support I needed at that time: I had no visitors except from my family, and I really think that I didn’t need any either.”

Patient MLF

“My wife came into my room. I could hear others outside. I saw my mother, my brothers and sisters – hey, all of them came! How wonderful, what a shock they have all had! I waved to them to say that everything was going well.”

Patient AFM

“I realised how much my family loves me when I got sick... they gave me the strength to fight for life.”

Patient DVP

Some other patients receive family support but in different ways. One patient described how he became strong when he just thought about his children and how he didn’t want them to visit him in case the CCU environment frightened them.

“I feel strong when I hear my son on the phone... I don’t want him to come and see the CCU, it will depress him.”

Patient SIM

Some other patients seek support from friends:

“My work friends visit me every day and they inform me of all the things at work... It makes me feel I’m still engaged with life and it is like someone is reading the news for me... and so on.”

Patient SIM

“Ah... one of my friends took groceries to my house and my other friend’s wife took the kids to and fro school because my wife broke her leg one week before I was admitted to hospital.”

Patient TSF

4.2.3.3 Reliance on Cultural Beliefs/Practices and Religion

The third coping strategy subtheme that emerged from the data was that of a reliance on cultural beliefs and practices. These results surprised me from the point of view how cultural beliefs affect generations, especially individuals residing in a foreign country who may not maintain and practise the cultural norms as their parents do. I thought that the reliance on cultural beliefs and religion will be found mainly among older patients. The point in my mind is how they can practice their cultural beliefs away from home country. And the answer was that:

“UK is a free religious country allowing all to practice their ritual as much as they do not harm others.”

Patients who claimed using ritual and fatalistic practices were Asians, aged above 55 years. They described how they use rituals and how fatalistic attitudes helped them to manage with the CCU stressors. Using rituals and fatalistic practices were found more among Asians, females, and older patients. Some of the patients who were 45 years and older commented that the one way they were able to find serenity was to turn to their religious beliefs.

“Faith gave me tranquillity and I think that this is priceless.”

Patient KKM

“I know that I’m always protected by Allah and I believe he will help me this time too.”

Patient KSM

“I applied positive thinking during my stay in the CCU.”

Patient TSF

Most participants described how they followed the rituals associated with their cultural beliefs. Indeed, participants described how they followed their parents' practice of ancestor worship, as this practice encompassed the belief that the ancestor could protect their health and life. They described how their parents taught them to keep a shrine to their ancestors and pay their respects to the gods by burning incense every day especially during the time they were hospitalised. One female Asian patient above 55 years of age described this practice saying:

“My family belongs to the traditional Chinese [religion]. I follow my family's customs. Um... um... all my family members worship our ancestors and respected deities at home. After being hospitalised, I've increased my worship. I believe my forefathers and respected deities will guard my health. I feel less stressed.”

Patient MAF

Another Asian patient aged above 55 years of age stated:

“I have great faith in (Allah)... every day I pray and I have morning and night rituals to say which give me the strength to cope with my disease.”

Patient MAM

“Um... I'm not worried! ... I always keep my holy book under my pillow.”

Patients NGM, STF

Some patients believed their severe illness is associated with evil spirits. This belief is illustrated by one European participant aged over 55 years who adheres to the Buddhist philosophy and who said:

“My grandfather seized other people’s property and killed people while he was a senior official in India... Some victims turned out to be the fiercest ghosts, evil spirits for revenge... now I repay the previous life debts of my grandfather and have a severe illness.”

Patient QAM

Most participants also described how they had asked for a special charm or an amulet or talisman to protect them and how it would be kept close putting it under the pillow or in a pocket. Other participants described how they went to English paper stalls to buy incense and special paper for burning in order to expel evil spirits. They described how performing such rituals comforted them and helped them hope for recovery. One African patient aged over 45 years commented:

“We are used to doing so at home and here we have a big religious society who helped me to get rid of evil spirits.”

Patient PJM

“We are surrounded by evil spirits but with daily practices of evil spills I will get rid of them and the disease caused by them”

Patient GGB

Fatalistic attitudes formed the second coping strategy of reliance on cultural beliefs that emerged from the data. Some patients described how they adopted a fatalistic attitude to cope with their illness. They described how they linked their disease to heaven and believed their destiny was dominated by heaven. One Asian patient above 55 years of age said:

“Um... um... life seems to be very fragile and determined by fate. This incident occurred so suddenly. It makes me feel life is short. Life seems to be unpredictable and not under your control. Er... it is dominated by ‘heaven’.”

Patient WPM

Other European patient aged between 35 and 45 years said:

“Ah... everything is demonstrated by heaven...”

Patient LMF

4.2.4 Caring Behaviour from Nurses

When patients were asked with whom they shared their concerns, what type of support they received and from whom, patients reported that although sometimes they received attention from physicians they felt that they were cared for very well by the nurses and they described the nurses’ attitude as kind and sensitive. The following comments displayed this:

“I remember that the nurses were very nice, very caring. They treated me as if they knew me personally... I felt that they were necessary.”

Patient SIM

“I remember a nurse who was an angel, even when she moved my chest for me to get rid of some catarrh, and how sensitive she was, they provided the care whenever I needed it... they were always smiling.”

Patient AJM

“I am most impressed with the explanation CCU nurses offered for me. I think it is the most successful thing in the CCU. First it gave me confidence; secondly, it made me feel secure. It is the best thing to have questions answered by a person caring for you.”

Patient SKM

“The nurse was always there for me.”

Patient SIM

At the same time, the interviewees felt that they received constant care and this was reflected in the nurses’ continual concrete interventions to alleviate their discomfort.

One patient said:

“The nurses who looked after me were always there; perhaps I bothered them more than I should have done asking for so much water; I was horrified by my mouth because it was so dry that I couldn’t move my tongue or say a word, but they often rinsed my mouth and they did it very well; they were very attentive.”

Patient WRF

The professionals’ attitude of empathy aided communication and the participants felt able to ask about the doubts they had in their minds without any difficulty. One of the patients expressed this as follows:

“Straight away they understood the way I was thinking... I communicated easily and I noticed that they wanted to communicate, or that they were showing me that they wanted to; I didn’t have any problem in that sense.”

Patient SAM

On the other hand, most of the participants said that they would be unable to identify the professionals who looked after them, although they acknowledged that the nurses were the ones with whom they had most contact.

“You lived with the nurse, shall we say, as she was there all the time, and if she wasn’t there you just had to lift your hand and she came at once, straight away.”

Patient RGF

They also added that all the members of the health care team conveyed a sense of security, trust and tranquillity because of their competence and proximity. They perceived the team's professionalism when they saw the mastery of their work. One participant said:

“The staff were very professional people. They knew what they had to do very well. There were times when something urgent happened and they had to move quickly but you saw that the people didn't get nervous... There can be a lot of problems but there is a solution for everything.”

Patient AJM

4.3 Nurses' Perception of Patients' Experience in a CCU

The second main theme that emerged from the research was the nurses' perception of patients' experience in a CCU. Nurses who met the inclusion criteria and showed interest were interviewed after they gave their written consent. Interviews lasted 35–50 minutes and took place in the CCU manager's office or the meeting room. Nurses talked about patient experience in the CCU from their own perspectives.

A total of 28 nurses working in the CCU were interviewed and below are the main questions used to gain in-depth answers for the stress phenomenon (Box 4.2 at the end of the chapter).

Other questions were raised during interview in an attempt to give a more in-depth explanation for nurses' narratives and these were:

- How do you evaluate patient care?
- Do you have general or special guidelines to follow for patient care?
- What do you think of the available guidelines?

When analysing the narratives three subthemes emerged from the main theme of nurses' perceptions of patients' experiences in CCU (memory recall, stressors, and support). These subthemes concur with my assumptions as I have experience as an ICU nurse working under similar pressure and can recognise and appreciate the work demands. When nurses were asked which stressors they felt patients experienced during their stay in the CCU they focused mainly on the anxiety and fear related to psychological stability and pain related to physiological stressors. Nurses reported offering their patients some types of support to cope with stress. Orientation and explanation, pain relief, family visits, rest and sleep, future support, and evaluating nursing support related to the main strategies used by nurses to help patients manage CCU stressors. The nurses' narratives did not surprise me. They drew my attention to how far nursing care services are from satisfying patients' expectations.

4.3.1 Memory Recall

In response to the first question, only nurses with five years of CCU experience and above were sure that patients could remember what happened in the CCU. Nurses with less than five years of CCU experience were not sure whether they could or could not. However, as a nurse I believe that patients could have some memories of the CCU because the CCU environment differed from the general ward and patients were concerned about their illness like those in the ICU. When nurses compared their work in the CCU with other surgical departments they commented that the CCU is a stressful department. Patients were treated for a sudden onset of disease which can lead to sudden death. It's not far from the surgical ICU but in surgical ICU/wards at least most of patients are scheduled to have an operation and they are

well informed about procedures, place, and treatment, and thus fear of uncertainty is reduced. The 14 nurses who had SICU experience commented:

“CCU is more stressful than SICU.”

Nurse N8

“From my experience in CCU and SICU I can see that in CCU I performed more activities and witnessed more deaths from the sudden onset of disease than in the SICU.”

Nurse H3

“I cared for a lot of patients in SICU but I had never been scared like caring for the CCU patient”

Nurses H6

Memory was related to length of stay and the longer the stay, the more the patients could remember; and it emerged that some patients might purposely suppress the unpleasant experience.

4.3.2 Stressors

4.3.2.1 Anxiety and Fears

Nurses explained that fear and anxiety were the most common feelings experienced by patients and related this to a fear of the unknown, and of the environment. As a nurse I can say it's an expected perspective from us as nurses. We think based on our main knowledge of the disease process. Nurses said that the strange environment, disease, and its outcome, the progress of disease, the recovery and uncertainty frightened patients. Furthermore, nurses believed that patients feared the outcome of disease, prognosis and complications. Two senior nurses with (1–5 years) experience in a CCU commented that during their work patients asked the

same questions and expressed the same fears. Two graduate senior nurses with five years' experience in a CCU and more than six months' experience in a medical intensive care unit commented using case examples:

“There was a 45-year-old patient with a myocardial attack who asked me more than 10 times in one shift about what his condition and how much the treatment would benefit him. [He was frightened of the disease, outcome and prognosis.] Patients were always uncertain and feared the disease and being in such place as the CCU with a lot of strange equipment.”

Nurse C3

“I assured a patient about his condition and I explained the cardiac catheterization procedure to him... even so he was still depressed and anxious about his condition and he asked, ‘If I need all that treatment this means I’m very sick and I might die and if I live I will I have difficulties when performing my daily normal activities?’”

Nurse C6

“Sometimes curious patients keep asking for the use of surrounding equipments.”

Nurse C6

Eight of the nurses mentioned that the environment was very crowded. The nurse manager of one of the assigned hospitals said:

“It’s a very small room filled with people... they are not only patients and care givers but also relatives, technicians, and sometimes administrative personnel. It caused patients to be confused and worried. Once a patient asked if all those people were going to attend to his bed and ask the same questions related to her condition.”

Nurse N2

No single room or cubicle was available for this group of patients and they were nursed in a row with curtains in between. Patients could easily see, hear and be aware of what was happening around them. Eight of the staff nurses commented that sometimes they were surprised that the patients used terminologies unrelated to their condition that they had heard from neighbouring patients' conversations with doctors.

“One patient admitted with chest pain called me and asked me, ‘When will I have Coronary Artery By-pass Graft Operation (CABG)...?’ and this was because he heard the doctors’ conversation with one post-catheterization patient who needed a CABG.”

Nurse H4

“During my morning shift a patient asked me, ‘When am I going to have my aspirin tablet...?’ I went to check her medication chart and there was no aspirin... I went back and asked the patient if she has taken aspirin before. The patient said no but all the patients she could see were taking aspirin tablets.”

Nurse N1

All the nurses commented that patients expressed fears especially when observing nurses working and rushing around for emergency cases. They feared facing the same condition and were uncertain of the outcome. That is why during emergency calls patients anxiously ask nurses what is happening to the other patients and if that patient will die or not.

“Patients requested that I resuscitate fast those patients whose hearts had failed.”

Nurses C7, H10, N8, H1

“Patients asked me if the emergency team is well trained or not to resuscitate patients in the event that they would have to face the same in the future.”

4.3.2.2 Pain

Nurses explained that movement is restricted by many intravenous lines, cables, and monitoring equipment. The alarms of the monitors are activated every time they move. Patients are bed-bound and face the ceiling. Whenever patients moved, they identified that they felt pain. Patients felt tired and the need for them to rest was repeatedly maintained by nurses. As a nurse working in an ICU I can say that the main concern is painkillers and narcotics as we believe that patients suffer from pain when admitted to hospitals and especially when admitted to an ICU or CCU due to the sudden onset of disease. One nurse described in detail that patient tiredness was caused by light in the CCU. The lights are continuously on and the health care providers carry out medical and nursing interventions 24 hours a day. The patients could not differentiate between day and night and they could easily become confused and disorientated. One nurse who had (three years') experience in a CCU shared her past experience with an older woman during her night shift:

“I always orientate patients because they are very confused; they do not know day from night. I once had an old female patient who asked me why I had turned off all the lights... What games was I playing? I told her that it was night-time. I was on night duty... [She said] I thought you were playing games.”

Nurse N5

One nurse mentioned that patients might express resistance, demanding and attention-seeking behaviour because of the CCU setting and the physical condition of the patients. Also their self-esteem might be affected because, in cases where they were unable to give consent, they appeared confused by health care providers performing procedures and examinations on their bodies. The nurses were obliged to accept orders irrespective of the willingness of the patients.

4.3.3 Support

Nurses commented that, in relation to the support that they provide to CCU patients, they provide unbalanced support when they should provide equal support to all patients. In my experience, I sometimes give patients a good level of support and sometimes not. This is related to workload and staff shortages. Nurses' perceptions vary according to their educational level. Staff nurses who have a bachelor's degree in nursing justified this in relation to patients' variations in gender, age, number of previous admissions to the CCU and ethnicity of patients. For example, patients aged 40–50 years are more demanding and stressed during their stay in the CCU and will keep calling to nurses for help – it is as if they are scared to be alone. One staff nurse said:

“I remember I cared for a 46-year-old patient and he kept calling me every half hour... Oh, I stayed one hour after the shift just to finish writing nursing sheets I couldn't finish because of him.”

Nurse N6

This theme emerged from the nurses who expressed that they would provide support to patients in order to combat the adverse effect of the CCU environment. The most commonly mentioned means of support were good communication in the form of orientation and explanation, adequate pain relief, liberal family visits, rest and sleep, and future support.

4.3.3.1 Orientation and Explanation

When I used to work in ICUs I observed differences between patients whom had been orientated and those who had not. In this study nurses explained that the orientation of patients should take place before any admission to a CCU, for

example pre-catheterization procedure visits or orientation in case of planned admission to a CCU. They stated that the orientation should extend throughout the whole course of a patient's stay. When a patient was scheduled for catheterization a CCU nurse went to the general ward and interviewed the patient in case of a planned admission to the CCU. She explained to the patient the type of procedure, the reason for the CCU admission, the CCU environment and the post-catheterization treatments and interventions. Sometimes the patient was invited to tour the CCU and look at the actual environment but this is usually done by physicians. Nurses believed that the pre-catheterization visits helped to allay patients' fear and anxiety and helped in the building of a rapport between the nurse and the patient too. The nurse manager commented on this, saying:

“New CCU nurses are assigned to this mission. We found that the pre-visit helps us to care for the patients. Patients who had nurses pre-visit cooperate effectively with treatment and reduce nurses' effort and time.”

Nurse N2

“His pre-visit to CCU helped him and me to remove the PTCA sheet and apply the recommended pressure without complications.”

Nurse N3

Nurses reported that the orientation and explanation should be continued throughout the CCU stay as reflected by one nurse who said:

“I cared for a post-PTCA patient who had a pre-visit... and all the time I explained the nursing activities I performed as it is part of my nursing care for patients.”

Nurses H1

“Nurses should keep orientating their patients for everything related to their condition or even to the surrounding environment.”

Nurse H5

“Orientation and explanation is part of nursing care and should be performed by all nurses to all patients.”

Nurses N10

Although nurses mentioned that the pre-visit was only the beginning of support to patients, they used comprehensive and continuous orientation and explanation methods with patients who were unexpectedly admitted to the CCU (e.g. admitted through an emergency department or suddenly transferred from other hospital floors, etc.) to help relieve their fears and anxiety.

“I kept assuring the patient about his condition and I explained all the procedures. This is repeatedly performed by me for my patients to reduce fears and anxiety.”

Nurse N4

Repeated orientation and explanation were necessary for the CCU patients. With the effect of anaesthetic drugs and increased anxiety level, memories were usually short and poor. Patients could easily forget what they had been told. Nurses need to repeatedly orientate patients to the CCU environment and inform them before procedures in order to gain their cooperation and confidence; it was necessary to explain procedures step by step, so that the patients could follow the explanation. One nurse gave a case example:

“On my morning shift I told the patient that I will come to change the intravenous canulla in his hand and I will insert another one as this it is the procedure to change it every 48 hours... and when I went to do so the patient started shouting that he didn't want to leave the CCU until he was fully recovered and he kept calling for help... Huh... what to say... I reassured him

that this is the regular policy in the CCU and he still had to go for another procedure and that he was not yet ready to be discharged. I reminded him that I perform this procedure before 48 hours as his stay was a bit long for cardiac evaluation.”

Nurse N5

4.3.3.2 Pain relief

In places like the ICU and CCU it's necessary to have adequate pain control. In this study nurses perceived pain control as necessary in order to provide comfort to patients, promote rest and sleep, and improve compliance of patients to nursing and medical interventions. For post-catheterization and myocardial infarction (MI) patients, analgesics were prescribed and nurses could adjust the medication according to the patients' pain level. Nurses in the assigned trusts stressed the need to evaluate the current pain guidelines.

Four nurses said:

“We follow the main heart foundation guidelines, the CCU pain control and analgesics policy to relief patients' pain... the health team within the CCU are highly focused on the pain control regimen with myocardial infarction patients and surprisingly myocardial infarction patients still suffer from pain... I become unsure of this pain; is it related to misapplication of guidelines or do I not understand pain?”

Nurses N5, N7, H3, H5

“Pain and pain control is part of the CCU work as the main reason for admission is chest pain.”

Nurse H5

4.3.3.3 Family Visit

Nurses also mentioned that the family play a very important part in the patient's recovery. I used to work in ICUs where I felt in many cases that the family plays an

important role in patient care. Family members encourage the patient to comply with medical and nursing interventions, and nurses could communicate better with the patients by using their language and their style. Family members helped to reinforce education provided by the nurses. The following was an example given by one nurse informant:

“When communication with the patient is not good, for example, with a patient who speaks a local slang that only his children can understand, we can ask the patient’s children to talk to the patient, which prevents miscommunication... this can save time and secondly, it can benefit the patient.”

Nurse N2

Closely associated with family support was the visiting policy. The existing policy insists that visits only last one hour in the afternoon and one hour in the evening. Most of the informants perceived that family visits are beneficial to patients. They allowed visitors to come at other times and implemented informal, flexible visiting hours. However, this practice created conflicts among visitors and nurses themselves. One staff nurse did not like other people observing her while she was carrying out procedures. She also feared that some of the procedures might upset family members. So, she felt frustrated by the informal visiting policies. Her frustration was illustrated by the following response:

“From the point of a nurse, selfishly, I do not like the family to stay here for the whole day. Many things need to be done... one task followed by the next... I do not like others watching me while I am doing things. Other people do not know what I am doing.”

Nurse H6

Most of the nurses in the two assigned trusts practise modified flexible visiting hours. They allowed relatives to stay while they are not performing any procedures

or when the CCU is not busy with patients and staff. However, nurses need consideration and understanding from relatives who, when asked to stay outside, should comply with the nurses' view.

"I had a young patient who was always calling for his family; I allowed them to enter when I was not carrying out any procedures or when I felt the CCU was quiet."

Nurse H3

4.3.3.4. Rest and Sleep

Nurses also identified rest and sleep as a physical need which is necessary for healing. When I was working in an ICU I found that adequate pain relief was identified as the first requisite for good sleep. Nurses tried to help patients by only turning on the light when necessary. Nurses with experience less of than one year highlighted the need for written guidelines to maintain rest and sleep. They would orientate and reassure patients and put them in the corner bed if possible or screen them to provide privacy. They provided divisional therapy such as listening to music via head sets and would group the nursing activities to minimise disturbance. However, they mentioned the 24-hour emergency admissions, continuous lighting, worry, pain, constant noise, disorientation and frequent interruption by the nursing and medical staff as the main factors influencing rest and sleep. One of the nurses discussed her experience with a restless patient during her morning shift. The patient was anxious and uncooperative while performing procedures and she refused to eat and when the patient was asked the reason why she could not sleep she replied that it was due to pain; she said:

"What can I say... my pain is because of the place... at night the light is on, the telephone is ringing, and staff are chatting like they are at home... in the morning the noise is louder because there are more attending staff and everyone talks too loud to the level that when there is no sound I can still hear

them... oh my God... what a caring place... if someone hates someone he should advise him to have a night in the CCU without sleep [patient said].”

Nurse H10

4.3.3.5 Future Support

The fifth type of support nurses reported that they provide to patients was future support. When talking about patient future support (follow-up and discharge plans), nine nurses expressed that they should provide support to patients after discharge from the CCU. They should follow up the patients in the ward and find out their problems and progress. The nurse managers at the assigned trusts identified the potential difficulties in following up patients in a general ward as the manpower in the CCU is already limited, staff are very busy, and the CCUs in the assigned trusts suffer from a shortage of nursing staff. She could not ask the staff to follow up patients after duty hours. One nurse suggested that a special support group of health care providers and volunteers be formed like the stoma support group.

“...there should be a follow-up discharge plan carried out by all staff. There also should be follow-up procedures for patients when they are transferred to the general ward. It’s for the patients’ sake as most of the patients feel the care will be less if they are in a general ward!”

Nurse C3

It was reported by two nurses from the two assigned hospitals that:

“We are unfair sometimes! Some patients receive support and are followed up to the ward only when there is enough staff and fewer CCU patients and this rarely took place... it’s like one in 10 patients will have this service.”

Nurses N1, H3

It was recommended by nurse managers in both assigned trusts that the National Health Service (NHS) should require more staff to ensure best patient care services possible.

4.3.3.6 Evaluation of Nursing Care

Nurses were asked how they evaluate their nursing interventions or support they provide to patients. Although, it is the nurses' responsibility to assess the efficacy of the medication hourly, most of the nurses reported that evaluation of the support they provide to patients is difficult. Shortage of staff, workload in the CCU, lack of guidelines, nurse-physician miscommunication problems, lack of supervision and nurse counsellors obstruct the evaluation process. One nurse shared her experience in evaluating a patient as follows:

“I gave my patient a painkiller and I should check its efficacy after half an hour... I was assigned to receive a new heart attack patient from the emergency ward... I went to check the painkiller's efficacy four hours later... we have lot of work and few staff to perform good nursing care.”

Nurse N7

“I offered an explanation for the need of angiography for an anxious patient. He was worried and scared. After one hour I returned back to him to check for his psychological stability. He was waiting to ask another question and I sat with him and chatted about it. This was done because I was free and I was assigned to one patient only.”

Nurse H5

“It's good to practise evaluation but it's much easier to be applied when step-by-step evaluation charts and guidelines are available.”

Nurse N5

“We need a nurse counsellor or supervisor that is equipped to help in evaluating nursing intervention in the absence of guidelines.”

Nurse N7

“Physicians are the source of the headache; they are demanding and asking for a lot in the CCU.”

Nurse H8

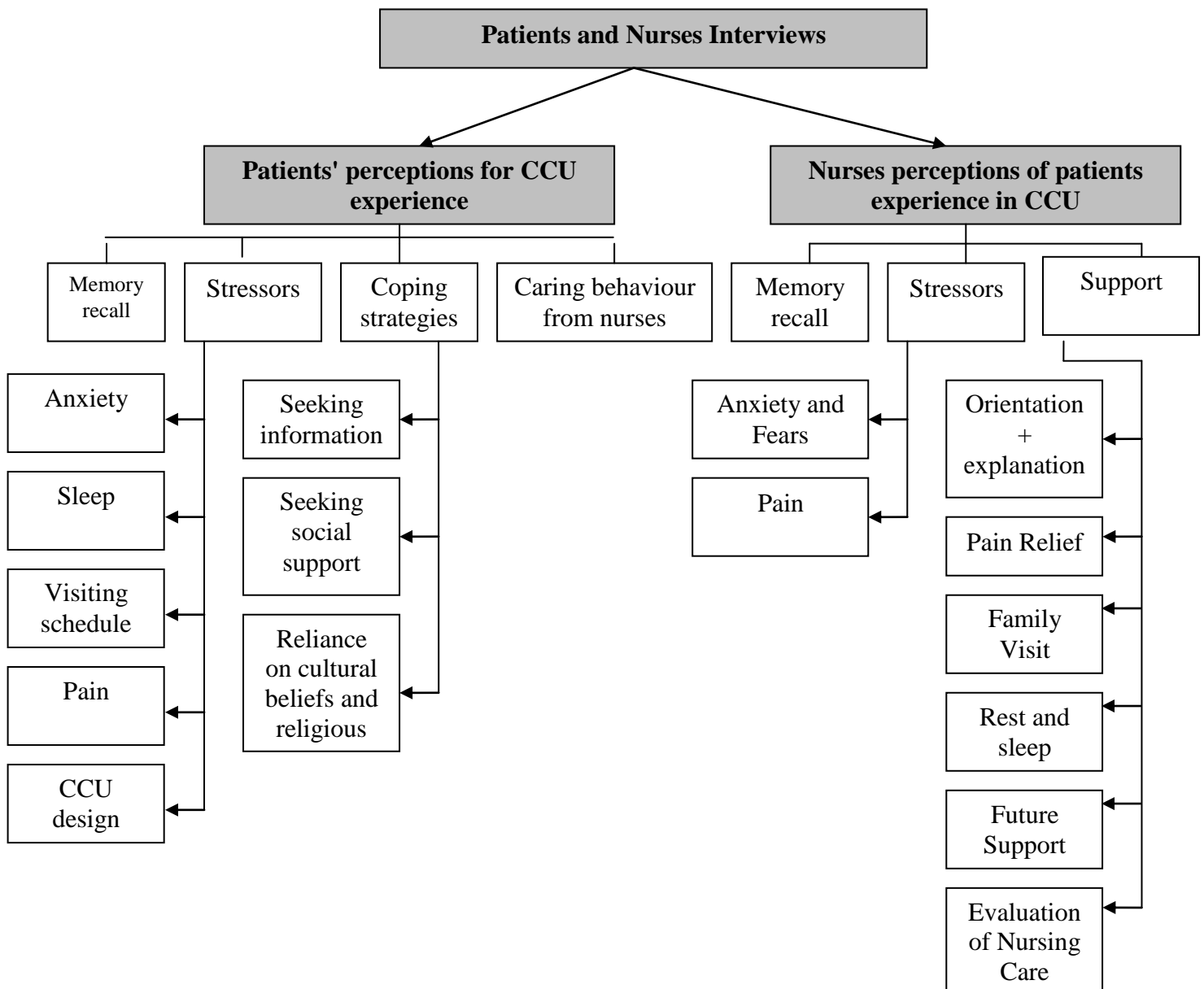
“I hate when the doctors enter the CCU shouting and yelling; they feel they have the power and we should follow them.”

Nurse H3

“When physicians are in the CCU for a morning round I feel scared of the head of department, you know he is a professor...”

Nurse N8

4.1. Diagram: summary of research themes and subthemes



4.1. Box: key responses for patients questions

Can you tell me about your experience as a patient in CCU, please?

All patients were able to recall their experience in CCU 24-48 hours from time of transfer to the cardiology ward. Patients shared their feelings of anxiety and fears and expressed the most important stressors they faced during CCU stay.

4.2.

4.2. Box: key responses for nurses questions:

1. Do you think patients could remember his\her experience in CCU?

Most of the nurses reported that patients could remember the CCU as it's a stressful place not easily forgotten. While other nurses commented that patients will not be able to remember as they were drowsy or sedated during their stay in CCU.

2. Do you think the CCU is a stressful environment for patients? Can you identify

4.4 Discussion

All the patients in this study remembered at least some of what happened while they were in the CCU, although some of them were tired during the early post-

transferred period. Dyer (1996) and McGuire (2000) proposed that soon after intensive care and coronary care units were developed as a specialty, there arose a phenomenon which was called "ICU-CCU Syndrome or Psychosis". It has been defined as:

A fluctuating state of consciousness that may be characterized by fatigue, distraction, disorientation, confusion, restless, clouding of consciousness, incoherence, fear, anxiety, excitement, illusions, hallucinations, and delusions (Easton & Mackenzie, 1988, p. 229).

It has been estimated that between 12.5% and 38% of conscious patients admitted to the CCU settings experience these alarming symptoms (Easton & Mackenzie, 1988), a condition which seems to resolve upon transfer to the ward (Dyer, 1996). The ICU-CCU syndrome, as usually described, has a rapid onset and is transient, lasting only for 24 to 48 hours although a longer average duration of 14.7 days has been reported (McGuire, 2000). The findings differed from other studies such as Jones et al. (1979) who reported that 5% of the patients had no recollection of their stay in the CCU. The percentage was 8% in Green's (1996) study, 15% in Chew's (1986) study, 25% in Asbury's (1985) study and up to 58% in Hall-Smith et al.'s (1997) study. This obvious variation might be related to the nature of the illness, patients' experiences and interventions in the CCU as well as the methodology and time of study. Asbury (1985) and Hall-Smith et al. (1997) conducted the studies three months after the patients were discharged from the hospitals and in Hall-Smith's study all had been in CCU for at least five days.

The results in this chapter show that there were similarities in some of themes and subthemes related to the perceptions of patients and nurses. For example in the theme related to stressors, patients and nurses perceived anxiety, confusion and uncertainty as the main psychological stressors. Both groups of participants related these feelings to the disease process and prognoses, the CCU environment with high technologies, and the outcome of disease. These feelings vary by age and gender. For example uncertainty differs from one patient to another. Patients aged 45 years and above were experiencing fear due to the suddenness of the disease while patients who had previous attacks and had previously experienced admission to the CCU were uncertain of the disease's consequence and what a new attack could cause. As a result of the uncertainty, patients experienced levels of psychological anxiety especially when waiting for doctors to talk to them about the condition. Similarities were found in the study of Chan and Twinn (2006) in the intensive care unit in Hong Kong.

Feelings also differ by gender (Peiro et al., 2006). The results of this research showed that females perceived more stress than males and expressed more anxiety than men. This concurs with previous data which indicates that across many nations, cultures, and ethnicities, women are about twice as likely as men to develop anxiety (Nolen-Hoeksema, 1990; Weissman et al., 1996; Peiro et al., 2006). This is true whether anxiety is indexed as a diagnosed mental disorder or as subclinical symptoms. Even when women and men experience the same stressors, women may be more likely than men to develop depression and anxiety because of gender differences in biological responses to stressors, self-concepts, or coping styles. Women's lack of social power makes them more vulnerable than men to specific major traumas. Traumas may contribute directly to anxiety, by making women feel

they are helpless to control their lives, and may also contribute indirectly, by increasing women's reactivity to stress (Nolen-Hoeksema, 2001).

Women's social roles also carry a number of chronic strains that might contribute directly or indirectly to anxiety. For many years, the biological explanations for women's greater vulnerability to anxiety and depression focused on the direct effects of ovarian hormones (especially oestrogen and progesterone) on mood. The highest majority of the female patients in this research were 45 years and above and this is the age of hormonal changes (premenopausal) (Nolen-Hoeksema, 1990, 1995). Simply put, despite widespread popular belief that women are more prone to depression than men because of direct negative effects of oestrogen or progesterone on mood, there is little consistent scientific evidence to support this belief (Nolen-Hoeksema, 2001). Although some women do become depressed during periods of hormonal change, including puberty, the premenstrual period of the menstrual cycle, menopause, and the postpartum period, it is unclear whether depression is directly related to the effects of hormonal changes on mood or depression during these periods of women's lives account for the gender differences in rates and causes of depression (Nolen-Hoeksema, 2001). This was stated clearly in a later study by Peiro et al. (2006) who confirmed the idea that women's demands increase during the age of premenopause either due to the loss of a life partner or a lack of visits from children.

Six patients reported anxiety when being transferred to the ward. This was because of the lack of orientation and the lack of a discharge plan as explained by Nurse C3. These results concur with the findings of Chaboyer et al. (2007). Discharge from the CCU is a positive step in terms of physical recovery; many patients' exhibit high

levels of anxiety at the time of relocation from the CCU to a general ward (Chaboyer et al., 2005a; Chaboyer et al., 2007). Over 30 years ago, the term “transfer anxiety” was used to describe the anxiety experienced by the individual when he/she was moved from a familiar, somewhat secure environment to an unfamiliar environment (Roberts, 1976, pp. 227–228; Watts et al., 2005). Currently transfer anxiety is an accepted North American nursing diagnosis (Schweitzer & Ladwig, 2002).

Transfer to the ward sometimes occurs so quickly that patients and their families receive little preparation about what to expect in terms of nursing care, unit routine, orientation to the nurse call system, or bathroom facilities (Chaboyer, 2006). After one-on-one or one-on-two nursing care in the CCU, patients and their families may feel rejected and abandoned on discharge (Chaboyer et al., 2005a). They are frequently so anxious about being left alone that they display dependency behaviour (McKinney & Melby, 2002). Similarly, a heightened level of anxiety in family members is associated with repeated questioning of staff (Mitchell et al., 2003). Ironically, while these behaviours may temporarily reduce their anxiety, it constrains the opportunity for the establishment of a therapeutic relationship with nursing staff. Dependency behaviour can be “terribly burdensome” on nurses (Standberg, 2003) and can impact negatively on the development of positive therapeutic relationships (Hupcey, 1998).

Although, patients perceived the need for sleep, pain relief, and family and friends’ extended visits as being the main requirements of patients during their stay in the CCU, the findings showed that nurses are aware of patients’ needs. Yet, CCU nursing staff appear to have little appreciation/knowledge of the wider

psychophysiological effects of exposure to excessive noise levels (Christensen, 2007). In this instance, nursing care of the ill patient appears to remain consistent throughout a 24-hour period and as such the ritualistic practice of subduing lighting during the night appears to make little difference to the noise levels being reported (Balogh et al., 1993; Kam et al., 1994; Christensen, 1997). A finding worthy of further investigation was the mention by some nurse informants that lights were left on continually. This would contradict “good practice”, which requires maintenance of circadian rhythms by reducing light at night, and would help in reducing some of the confusion and disorientation which respondents acknowledged was a result of not being able to differentiate between night and day.

Despite the strategies used by the nurses, patients suffered from moderate to severe pain. They were tired and could not sleep well, which they related to meaningless noise in the CCU, as expressed clearly by patient AJM. Pain and sleep deprivation were problems that emerged in this study and other studies in the literature review. Preoperative visits and a flexible visiting policy were appreciated both by the nurses and patients to support patients’ ability to cope with stress (Christensen, 2007). The early work of Morgan and White (1983) identified that while CCU nursing staff appeared to have a good understanding of the patients’ need for sleep, they found that in some cases nursing staff could not differentiate between essential and non-essential procedures and acceptable levels of noise. The latter work of Christensen (2005b) strengthens this premise that CCU nursing staff do have a knowledge deficit with regard to the effects of excessive noise exposure particularly within the CCU where the consequences can have a profound effect on patient well-being.

Christensen (2007), in his study, used a multiple-choice questionnaire to identify nurses' concepts of noise in the CCU. Findings show that CCU nurses were unable to identify specific levels of noise; the physiological effects of noise exposure in terms of immune suppression, wound healing and stress hormone stimulation; and current legislation regarding noise exposure. However, even more interesting was that, while this cohort were able to attribute noise exposure as being one of the contributing factors causing CCU delirium, many of the nurses (80%, n = 76) were unable to identify the typical behaviours associated with this condition. The relevance of this related to the association between noise and physiological effects; the greater the noise level the more pronounced the physiological effect. For example, Minckley (1968), Woods and Falk (1974), Seidlitz (1981), and Kryter (1994) showed that high levels of noise were consistent in disturbing patient sleep, increasing the need for pain relief and elevating cardiovascular functioning that included peripheral vasoconstriction and tachycardia.

Andren (1980) found that on exposure to high noise levels, normal individuals showed elevations in cardiac functioning (increases in diastolic blood pressure and systemic vascular resistance as well as variable changes in heart rate). In similarly, Snyder-Halpern (1985) found increases in heart rate when healthy individuals were exposed to taped coronary care unit noise while sleeping. On the other hand staff conversations tended to be more noticed by those patients they were caring for (Christensen, 2007). What is of interest is that this phenomenon of staff conversations influencing the noise levels within the CCU has been reported in earlier studies yet appears to be an ongoing problem within this environment (Bentley et al., 1977; Hilton, 1985; Kam et al., 1994; Meyer-Falcke et al., 1994; Christensen, 1997; Kahn et al., 1998; Chmiel et al., 2004). Disturbingly, the

conversations observed at the bedside were at times unrelated to patient care and conducted directly over the patient and as such there appeared to be no recourse for the patient in this instance because in the main ward they were sedated.

Schiza et al., (2010), in the study of sleep patterns in acute coronary care patients, found that although they controlled the physical factors like pain, noise and light in the CCU, patients still showed sleep difficulties and they related to their psychological status rather than the physiological environmental stressors. This concurs with the current study as patients not only correlate sleep deprivation to pain, noise or light but also to separation from family, not being able to fulfil their family role and the disease process.

The current research findings revealed patients' need for flexible visiting hours and the need for their relatives and friends to be with them during their stay in the CCU. This was supported by some nurses and rejected by others, for example Nurse H6 who did not like others watching her while performing CCU procedures. In the current study nurses perceived that patients need the attendance of family and friends as a source of support but in contrast nurses were restricted by the organisation's visiting policy. The need for family members to be close to ill patients is widely recognised (Leske, 1991; Walters, 1995).

Treatment in a coronary care unit (CCU) is not only very stressful for the patient but also for the family. Meeting the needs of a patient's family is an essential part of the responsibilities of CCU physicians and nurses (Azoulay et al., 2001; Verhaeghe et al., 2005). Although unrestricted visiting hours have been identified as an important need for CCU patients and their families, strict visiting hours are still common in

the adult CCUs (Livesay et al., 2005; Berti et al., 2007; Garrouste-Orgeas et al., 2007). Nurses favoured restricted visiting hours because excessive visits were presumed to be detrimental to the patients. For example, patients were not getting enough rest and nurses did not have time to organise care. Similarities were found by Olsen et al. (2009) who investigated what family members meant to patients in intensive care units. They found that family support and the flexible visiting hours were of mutual importance for the patients and their families (Olsen et al, 2009). Too many visits interrupted the delivery of nursing care and could have a negative effect on the functioning of the unit (Berti et al., 2007; Berwick & Kotagal, 2004).

One of the negative experiences patients reported was that of seeing other patients in the CCU. Privacy is a difficult problem to solve, as it is related to the physical structure of the CCU. However, the precaution of keeping the curtains drawn should be taken into consideration, so that other patients cannot be seen and to maintain privacy (Barrio et al., 2004). In this study patients' preference for the open unit design over the single-room unit varied by gender and age. Younger patients preferred single, private rooms and more so among females rather than males. Some of the male patients preferred being nursed in open-unit designed wards. Kirk (2002), in a study of hospice patients in England, found that the majority of patients preferred a single room because of the greater privacy offered, reduced noise and embarrassment, improved quality of sleep and because family members could visit for long period without upsetting other patients.

Similarly, in the United States, a survey conducted on assisted-living facilities demonstrated that 82% of respondents preferred a private room. Of those surveyed, women and those from the Western United States were more likely to prefer a

private room (Contemporary Long-term Care, 1997). Ittelson et al. (1970) also noted that smaller, private rooms gave patients greater freedom with regard to behaviours and activities. Also, roommate assignment can affect patient anxiety and stress. Research narratives showed that the main reasons for females and young patients' preference of closed, single-room unit design related to maintaining privacy and allowing more time for visiting. These results concurred with those of Barrio et al. (2004).

Moreover, older patients in this research preferred the open design unit rather than a private room, as they liked to know what was happening around them. Pease and Finlay (2002), in their study on oncology patients in a British hospital, found that 34% of the patients preferred a four-bed bay, whereas only 20% preferred a single-occupancy room. The main factor in selecting the shared room was the desire to avoid isolation. Reid and Feeley (1973) also repeated that within the United States, if given the choice, fewer than half of the patients surveyed preferred a private room.

Double-occupancy rooms were favoured because patients had someone to talk to and they felt help was available, if needed, from their roommate. Negative aspects of these rooms included the lack of privacy and high noise levels, especially when patients had visitors. Financial concerns were not inclusive with respect to the layout of rooms (Reizenstein & Grant, 1981, as cited in Carpman & Grant, 1993), they reported a variety of opinions: 45% of the patients choose private rooms, 48% choose semiprivate rooms, and 7% choose multi-bed rooms. Carpman and Grant (1993) state that some patients were willing to trade privacy for company; they enjoyed having someone close by to talk to during their hospital stay. In addition,

some patients felt secure knowing there was another person nearby to call to for help in case of a medical emergency, rather than depending on a call button or the chance that a nurse might happen to be nearby when needed (Chaudhary et al., 2006).

Nurses perceived the need for future support through follow-up visits to patients in the CCU and then in the general ward. Engstrom and Soderberg (2010) found that follow-up visits gave CCU nurses new and valuable knowledge about the ill person's, and their close relatives', situation during and after their time in the CCU. Culter et al. (2003), Strahan et al. (2003) and (Engstrom & Soderberg, 2010) found that such visits to the general ward result in an expansion of staff's understanding of the acute illness experienced and an opportunity for people who have been involved in the care to listen to the acute illness experiences.

The current research findings clearly demonstrate that most participants experience uncertainty, not only about the outcome of their health problem, but also the new additional roles and responsibilities that create negative emotional responses. Although, the most common emotional response is anxiety, the intensity of the emotional response varies between individuals, for example uncertainty contributing to the intensity of the emotional response. Feelings of uncertainty appear to trigger coping strategies of seeking information and support to managing such feelings. The finding is generally consistent with those of previous studies demonstrating that seeking information and support from health care professionals reduced a partner's emotional turmoil and uncertainty (Leske, 1992a; Stewart et al., 2000; Morales et al., 2003). In general, higher levels of social support are associated with the better psychological and physical well-being (DeLongis & Newth, 1998).

Although patients perceived that anxiety was caused by waiting for doctors to clarify some points related to health problems, in the current study most participants described how nurses were helpful health care professionals who answered all their questions and thus reduced feelings of uncertainty and anxiety. Uncertainty also influenced their coping strategies namely seeking support from family members. Increased responsibilities due to disease process and role changes triggered participants to seek emotional support from others to reduce their families' level of stress and concerns of the current spouse condition (Stewart et al., 2001). This finding concurs with those of previous studies that demonstrate that the key components of emotional support include sharing, listening, empathy, understanding, reassurance, companionship and concern (Stewart et al., 2000, 2001; Chan & Twinn, 2006).

In Asian cultures, religious, spiritual, and existential coping strategies are posed to a strong association with psychological symptoms (Sinha & Watson, 2007). Yeh, Arora, and Wu (2006) proposed a new theoretical model of coping with stress that includes family support, respect for authority figures, intercultural coping, relational universality, forbearance, social activity, and fatalism. Are these dimensions relevant only in certain cultures? As culture is a pervasive and fundamental issue that concerns pertinent stress and coping paradigm (Chun et al., 2006). Chun et al (2006) recommended that future research should examine the relative contribution of cultural beliefs in Western cultures. A comprehensive analysis of the multicultural issues in stress and coping has been presented in a recent publication edited by Wong and Wong (2006) who revealed a strong relation between culture and coping with stress. They found that Asian (presented by Chinese cultures) used

their cultural beliefs (Buddhist) to cope with stress caused by admission of their partners to ICU.

The other inference is that of the use of cultural beliefs and practices. The findings indicate that from all different religions, the majority of patients reported the effect, importance of cultural beliefs and their ability to assess in the cure of illness was important (Barra et al., 2002). Such ritual practices teach the ill to pray for help from the healer and help manage related stress. Indeed, the findings from the study demonstrated that some participants were profoundly affected by the classical religious philosophy believing life stressors were determined by fate and are condemned by the nature of the universe. Patients with cultural beliefs believed that “heaven deity” explained their illness implying that individuals cannot change nature and the course of events as its part of their destiny (Mok et al., 2004; Chan & Twinn, 2006). In addition, some participants were greatly influenced by the Buddhist philosophy of causation in which disease is viewed as the consequence of actions in a previous existence and is associated with evil spirits (Chen & Rankin 2002). Chen and Rankin (2002) findings demonstrated how most participants used religious beliefs to cope with situations over which they had little control. These findings concur with those of previous studies in which significant religious involvement has a positive effect on normal personal functioning (McIntosh et al., 1993; McCullough et al., 2000; Rammohan et al., 2002).

Although research findings revealed that patients associated the care they received with nurses rather than other members of the health team, nurses, especially those with CCU experience of less than one year and who hold a diploma degree in nursing, were not satisfied with the level of care they provide. They accounted their

unsatisfactory feelings to the absence of written guidelines which they believed would help in the evaluation process of patient care. The primary goal for nurses is to pursue positive patient outcomes and to increase their satisfaction with care. However, quality in health care is a function of many factors, including hospital environments, timeliness of communication with physicians (Manojlovich et al. 2009), nurse-physician relationships (Kramer & Schmalenberg, 2003; Hendel et al., 2007), nurse staffing levels (Aiken et al., 2002), skills of individual physicians/nurses (Sevdalis & Brett, 2009), and hospital priorities, policies and managerial support for nurses (Laschinger et al., 2003; Tervo-Heikkinen et al., 2008).

Thus, perceptions of the quality of care can be subjective and differ across cultures and health care delivery systems. For example, Buerhaus et al. (2005) noted that about 79% of registered nurses (RNs) in the USA perceived the nursing shortage as a major problem influencing the overall quality of patient care in hospitals. Additionally, Milisen et al. (2006) indicated that a stressful work environment was reported by hospital nurses in Belgium as an obstacle to providing good nursing care to patients. Thus, to create a favourable practice environment and improve relationships with physicians, nurses must listen directly to patients and use the information collected to guide quality improvement.

When linking nurse staffing to patient outcomes, several classical studies in the United States and the United Kingdom demonstrated a relationship between nurse staffing levels and patient mortality (Belgen et al., 1998; Bray et al., 2010). Sasichay-Akkadechanunt et al. (2003) indicated that hospitals that had cut total staff by 7.5% or more had higher mortality rates than other hospitals in that study.

Similarly, Bond et al. (1992) found that mortality rates decreased as the registered nurses staffing level per occupied bed increased. Recently, Tarnow-Mordi et al. (1999) reported that an adjusted mortality rate was more than two times higher in patients exposed to high coronary care unit (CCU) workload than in those exposed to low CCU workload, defined by average nursing care hourly requirements per occupied bed and peak occupancy.

In contrast to the previous studies, several studies of patient outcomes across institutions did not reveal a significant relationship to nurse staffing levels. Two studies found that the proportion of the registered nurses (RNs) was unrelated to patient mortality (Wo et al., 2000). Moreover, Silber et al. (1992) did not find an association between nurse-to-patient ratio, nurse-to-bed ratio, or nurse-to-operation ratio, or death rate, adverse occurrence rate, or failure-to-rescue rate. Interestingly, Aiken et al. (1994) reported that Magnet hospitals had lower mortality rates and a higher skill mix than the five sets of control hospitals, but the association between lower mortality rate and higher skill mix was not statistically significant. Overall reviews of the studies in the United States and the United Kingdom have demonstrated that nurse staffing changes affected patient and organisational outcomes (Sasichay-Akkadechanunt et al., 2003).

Nursing care provisions by nurses with CCU experience of less than one year appear to be more demanding than experienced nurses. Shen et al. (2010) reported that satisfaction with the health care and the less reported stress were among experienced nurses with no managing or leadership responsibilities. As when nurses become more experienced they become able to tolerate and manage environmental stressors. The combined effects of nurses' educational levels and the number of years of

experience were well documented. In recent literature Kendall-Gallagher and Blegen (2009) indicated that good patient outcome was promoted by nurses with CCU experience of more than two years and who hold a baccalaureate certificate in nursing.

4.5 Conclusion

Qualitative research has shown that in the stress context of pain, sleep and movement restrictions were the main stressors perceived by patients and nurses. Nurses perceived it in relation to their nursing intervention. The most interesting findings revealed in the current research indicated that patients' physical pain was more likely related to psychological consequences from anxiety, fears and uncertainty, lack of privacy, and visiting schedules. Nurses, when caring for patients, should give enough time to maintain communication with the patient to enable them to voice their concerns as part of their nursing care. Patients should trust the health team to be the primary source of information on their condition. Health organisations should provide training to encourage nurses to improve their communication skills and to enhance the ability to manage patients' psychological stressors.

Research findings indicate that perceptions of patients and nurses were influenced by their socio-demographic characteristics. From the patients' and nurses' narratives it became apparent that female patients experienced more stress than male patients and the younger the patient the more stress and more concerns they experienced. Younger patients reported more family and work concerns than older patients (Pang & Suen, 2008). Patients above the age of 55 years experienced anxiety and stress related to the outcome of their condition while younger patients experienced more stress not only related to the suddenness of the disease, inability to fulfil family roles but also related to the CCU environment with its advanced technology.

Staff nurses, those who are not in charge and are not managers, are more aware of the effect of support based on patients' needs and patients' socio-demographic characteristics. Nurses with CCU experience of less than one year found work more demanding and perceived more stress than their counterparts. For them, being in a

new place with its high demands made nurses feel less satisfied with the nursing care that they were able to deliver. They highlighted the need for nurse counsellors and guidelines to help them to evaluate the nursing care they provide. Training courses are needed to improve their skills in managing stress, tolerating stressors and working in stressful conditions. Health care organisations should encourage nurses with lower educational qualifications such as a diploma in nursing to be study towards a baccalaureate or higher to improve their knowledge. Coronary care nurses should use knowledge with experience for better implementation of nursing care.

Although experienced nurses perceive stress less than their counterparts, they still perceive the CCU as a stressful environment. When a nurse becomes experienced and is in charge of his/her work and is assigned to maintain the accuracy of work, the work becomes much more related to ward management than patient care. Nurse-physician miscommunication was an obstacle that hindered the efficacy of nursing work. The more experienced nurses, the less they perceive stress. This is because experienced CCU nurses can tolerate stressors and manage working with stressors (Engstrom & Soderberg, 2010). Experienced nurses should improve their CCU nursing care skills and act as a mentor for nurses recently employed in the CCU or to other staff nurses with experience of less than five years. The counselling role of an experienced CCU nurse will help other nurses, in the absence of guidelines, to evaluate their implementation of nursing care thus reducing perceived environmental stressors.

Nurses highlighted the need for well-educated CCU nurses and nurse counsellors to help evaluate nursing care. Nurses also pointed to the need to re-evaluate the

available guidelines and to include nursing assessments, nursing implementation and nursing evaluation rather than medical care implementations. Nurses that are in close contact with patients are supposed to offer optimum care which reflects the proficient delivery of health services; guidelines and organisations should help them to improve the delivery of care. Human resources should employ more staff to reduce the workload and to enhance patient–nurse communication. Nurses in a CCU need to first understand the CCU philosophy of care. They could undertake training programmes in stress management, in how to differentiate between patients' stress and their own stress, and they should be able to voice their opinions to organisational managers and ward managers. These methods could improve nursing care.

In the current study, whatever the results are, they are all interrelated. For example, patients reported that pain not only affected their comfort, but also interfered with their sleep and compliance with treatment. Some of the patients experienced fear and anxiety, and the degree of fear and anxiety was closely related to the amount of knowledge given by the health care providers. Patients felt safe and secure when they were psychologically supported by nurses and their families. Despite the availability of analgesics, patients experienced moderate to severe pain in the CCU. Noise, pain and worry contributed to poor sleep.

Patients recommended the need for extended and flexible visiting by family members and close friends. However, the CCU policy enforced restricted visiting although some nurses encouraged informal, flexible visiting hours. This is due to the practicalities of nursing care and mandatory patient rest periods.

Interesting findings included patients' coping strategies in response to stressors during their stay in the CCU. Ethnicity, cultures and beliefs played an important role in ways of managing and coping with stress. Nurses should give more attention to individual patients' values and beliefs when implementing nursing care.

As regards the risk of developing CCU psychosis, stress related to anxiety should be dealt with carefully. Nurses should be aware of this concept and try to reduce the occurrence of such a condition among CCU patients. Health organisations should give attention to and schedule more educational programmes for nurses on how to prevent and treat psychosis.

4.6 Personal Reflection, Limitations, Difficulties and Dilemmas

When I enrolled on the Educational Doctor of Philosophy (PhD) programme, my intention was to use a mixed research approach in one study as this is the new direction in nursing research. I had previously conducted studies using a single quantitative approach. In addition to using a mixed approach I employed qualitative research design for the first time in my research career, and this was challenging. My PhD involved five stages: (1) writing the proposal, (2) conducting ethical approvals, (3) data collection and pilot study, (4) data analysis, and (5) writing the results and discussion.

The first stage was writing my proposal. This stage took around two months. It was the best time I had as I learned the correct way to write a thesis. I learned which type of questions I should raise when writing any sentence. I learned how to read

effectively. It was at this stage that I wrote the methodological chapter, and I couldn't understand the reason for writing it at this stage until later when data collection took place. The first stage of comprehensive writing and learning allowed my research idea to become clear when conducting ethical approvals; I became aware of what exactly I wanted to do in the sites when collecting data, and saved time during the last stage of writing the thesis. This stage was similar to my previous Masters Degree experience but this time I was much more organised.

Although my learning curve has been steep, and my attitude towards using critical realism (naturalistic approach) has dramatically changed through academic study, I realised that naturalistic approaches are entrenched by their supporting philosophical principles. Through learning, I have an improved appreciation of the vocabulary and principles of using a mixed method approach design. Previously, I failed to appreciate the significance and depth of interpretation required during data analysis and the potential for bias and how this could affect the research outcomes. By undertaking this research study, I have gained insight into the difficulties that can be encountered using humans as research subjects and when using a single research approach.

Before commencing this study, my experience of methods and methodology focused on prescribed approaches that encouraged the replication of results and statistical analysis. I found this research intellectually stimulating. The preparation of the research design took a considerable period of time, as I had to ensure that the methods and methodology were credible, tangible and applicable.

The second stage involved gaining ethical approval. The process at the beginning looked easy and similar to what I did for my Masters degree in Amman, but upon commencing it, it took a lot more time. The delay was due to the National Health Service's (NHS) research and development (R&D) system for international students – we have to provide medical and supportive documents from sponsors and home country for medical fitness and criminal clearance. This whole process took around one year. The positive aspect of the experience was that it gave me the chance to appreciate what exactly is involved in gaining ethical approval, and it also gave me the chance to be in contact with the Trust before starting data collection.

Data collection was the third stage of the programme. After gaining ethical approval to conduct the study, I started with the pilot study as prescribed within the study framework. I had two concerns related to this stage. The first was that English is not my native language and I was worried that some patients may use “slang” that I would not understand. The second was related to dealing with cardiac patients which can be challenging as their health may deteriorate suddenly and therefore I might lose a respondent as I had a limited time period to conduct my research in each Trust. These concerns were overcome as I recorded the interviews.

I read numerous texts on how to undertake an interview, but it was not until I experienced the interview that I was able to relate to it. I was nervous, despite being fully prepared. My first impression of undertaking interviews was that I would ask the question and the participants would discuss it and make valid comments with limited direction from myself. In reality, this was impossible. I had to attentively listen to all the comments in order to gauge when to ask the next question or make comments that would help to develop the discussion further but not influence

responses. I had to rephrase questions when participants either did not answer or looked puzzled, and thus I had to adapt the sequence quickly in order to maintain participants' interest and the consistency of responses. This happened when I realised that the flow and timing of questions failed to adhere to my original intentions. Even though I felt I had prepared a logical sequence of questions, I found myself thinking ahead what the next question should be in order to not lose them, and also to know when to ask them. On more than one occasion, I had to change the nature of the question when I felt no new or original material was being offered.

In undertaking interviews, I found the role of the critical realism philosophy researcher was much more challenging, stimulating and analytical than I thought. My main concern was that participants would look at me as an observer or evaluator rather than a normal researcher. I feared that patients would be unwilling to talk or even scared to talk in the fear that their discussion might affect their treatment. Also I feared that nurses might feel that talking would interfere with their work evaluation. To my relief, these fears were unfounded. The reasons for this related to the fact that I, when recruiting participants, provided information sheets with a full explanation of my role and their role in the study, and, prior to commencing the interview, I allowed time for discussion and answering any questions. I endeavoured, as part of participant ethical protection, to provide all details and assure anonymity, confidentiality and the voluntary nature of the participation. I also assured participants that the main reason for conducting the research was to benefit the future of coronary care unit improvement.

Data analysis started on the first day of data collection. I learned the methodological vocabulary and read numerous texts on the procedures of analytical abstraction, but

one cannot appreciate or recognise the pitfalls until one has experienced the process. Analytical abstraction was totally dissimilar to the numerical analysis; it was an extremely time-consuming process especially with the large number of data I had. I kept reading and supervisors helped to direct me as I developed good skills in qualitative data analysis. As for the quantitative data I was familiar with SPSS software from the experience of my Masters degree and I refreshed my memory by attending Brunel University postgraduate classes for preparing data for SPSS analysis.

The internal validity of the transcripts was maintained as being approved by supervisors by which the researcher considers research supervisors as external reviewers (Polit & Beck, 2004). The supervisors reflected on whether the participants' narratives reflected the themes retrieved from Giorgi's method of analysis. On the other hand, reading the transcripts through many times and listening to the tape recordings more than twice helped to develop and maintain the confirmability of the data (Weber, 1985).

I found data analysis easier when I compiled the context and checklists, as this allowed me to make comparisons and explore the repeating variables, phrases or indicators. I originally felt that this component would be the most analytical but I was wrong; deciphering and reflecting on the meaning of the data to generate the themes and the causal network was more developmental and theoretical. I spent a considerable period of time reflecting on the data and its meaning. Drawing figures enabled me to explore connections between themes and the available data.

The final stage was writing the thesis. I experienced dilemmas with the discussion part, as I had difficulties in writing a final discussion that merged the qualitative findings with the quantitative ones. My research supervisor's instruction allowed me to reach my goals and answer my research questions.

The entire experience was interesting and challenging at the same time. My research supervisors played a major role in the completion of the research. The experience has had an effect on me as a learner, professional, and as a person. Being a learner in the programme, I learned how to use new research methods and how to maintain its principles. As a professional I achieved what I came for as a nurse and as a lecturer. I knew what the weak points were in hospitals that can cause patients to experience stress and what type of nurses are needed for the future. As a professional, I learned how to guide a student's learning as my supervisors guided me. Being in a foreigner culture to learn was beneficial for me. I realised that nursing practice is the same world wide and the differences rose from the roles and regulations which is frustrated by political issues. Lastly, as a person I learned how to use my skills and the experience has improved my patience and character. I learned how to explain all reactions and be a good listener. In general, I'm satisfied with the experience and with my research. I have worked hard and suffered from homesickness a lot but all of this has helped me to complete the research and work harder.

CHAPTER 5: QUANTITATIVE FINDINGS

5.2 Introduction

Chapter 5 presents the data gathered from the environmental stressor questionnaires given to patients and nurses. This chapter examines patients' experience of acute

coronary care unit stressors from patients' and nurses' perspectives. Data was gathered from Site (1) and Site (2). All descriptive statistics were computed using the Statistical Package for the Social Sciences (SPSS, version 15, 16, personal computer). Preliminary data analysis included descriptive statistics to describe the study sample via mean (M), standard deviation (SD), frequency (N), and percentage (%). No correlation or significance statistics were used as described in Chapter 3 (3.11.2). Descriptive statistics were sufficiently suitable to answer the current research questions. The mean values were ranked and they represent the differences between the mean and standard deviation of the two groups based on patients' perception of stressors. Within this chapter the researcher checked to what extent the main National Health Service (NHS) clinical guidelines for the in-patients resemble the stressors perceived by patients and nurses.

Results

5.2. Sampling characteristics:

Table 5.1 illustrates sampling characteristics for patients. The patient group includes 60 voluntary subjects: 30 patients (50%) were recruited from Site (1) (NHS Trust) and 30 patients (50%) from Site (2) (NHS Trust). Of the 60 patients, 30 (50%) were male and 30 (50%) were female. The ethnicity of patients was European (40%), Asian (36.7%) and African (23.3%). Ages ranged from 35–55 years and older and the most common age range was 45–55 years (36.7%). About 55% of patients were married; others were widowed, single or divorced. Almost 50% of the patients were educated at “high school or lower”. The majority of patients had no previous admission to a CCU (51.7%) while the remaining patients (48.3%) had experienced admission to a CCU previously. The length of stay in the CCU ranged from 12 hours to 10 days with a mean of 4.2 days. The majority of patients were admitted

through the emergency department (56.7%), while the remaining patients were either referred from the same hospital (21.7%) or were referred from other hospitals (21.7%).

5.1. Table: patients sampling characteristics:

Sampling characteristics	Frequency	Percent (%)
Trust		
Site (1)	30	50%
Site (2)	30	50%
Gender		
Male	30	50%
Female	30	50%
Ethnicity		
European	24	40%
Asian	22	36.7%
African	14	23.3%
Age		
35-45 years	20	33.3%
45-55 years	22	36.7%
55 years and above	18	30%
Marital status		
Married	33	55%
	10	16.7%

Single	11	18.3%
Widow	6	10%
divorced		
Educational level		
High school or below	30	50%
Diploma degree	11	18.3%
Bachelor degree	10	16.7%
Others (master + PhD)	9	15%
Previous admission to CCU		
Yes	29	48.3%
No	31	51.7%
Method of admission to CCU		
Referral from hospital floor	13	21.7%
Referral from other hospitals	13	21.7%
From emergency departments	34	56.7%

In the CCU nurse group, 28 questionnaires were collected through direct interview (Table 5.2). Eighteen nurses (64.3%) were employed at Site (2) and 10 nurses (35.7%) were from Site (1). Sixteen of the CCU nurses (57.1%) were male nurses and 12 (42.9%) were females. The highest category of nurses comprised bachelor-degree holders (57.1%), 13 (46.4%) of whom were from Site (2) and three (10.7%) from Site (1). Twenty-five per cent were employed as staff nurses. Fifteen of the CCU nurses (53.6%) had CCU experience of less than one year. Some nurses had work experience in surgical or medical intensive care units before joining the CCU. Sixteen (57.1%) of the CCU nurses had over six months' experience in a medical intensive care unit (MICU); seven (25%) of whom were based at Site (1), and nine (32.1%) were based at Site (2). While the highest majority of nurses had MICU experience, only one nurse (3.6%) in the entire population of CCU nurses that participated in the current study, working at Site (2), had over six month's experience of working in a surgical intensive care unit (SICU).

5.2. Table: Nurses sampling characteristics

Sampling characteristics	Site (1) Trust		Site (2) Trust	
	n	%	n	%

Gender				
Male	5	17.9	11	39.3
Female	5	17.9	7	25
Educational level				
Diploma	7	25	4	14.3
Bachelor	3	10.7	13	46.4
Others (masters +PhD)	-	-	1	3.6
Working experience in CCU				
Less than one year	5	17.9	10	35.7
1-5 years	4	14.3	6	21.4
10-15 years	1	3.6	2	7.1
Working experience in MICU				
Less than 6 months	1	3.6	4	14.3
More than 6 months	7	25	9	32.1
No MICU experience	2	7.1	5	17.9
Working experience in SICU				
Less than 6 months	1	3.6	12	42.9
More than 6 months	-	-	1	3.6
No SICU experience	9	32.1	5	17.9
Total = 28 nurses	10		18	

5.3 Patients' Perception of Stress

Patients who rated the environmental stressor questionnaire (ESQ) were uncertain about whether the CCU was a stressful environment or not. All patients agreed that “they don’t want to experience being in a CCU again”. For this reason, patients were asked to rate the ESQ based on what they felt their needs were and what caused them discomfort. Table 5.3 illustrates the 10 most stressful items ranked by patients from a total of 50 ESQ items. They are arranged in ascending priority based on the mean (M) and standard deviation (SD) of the results.

“Being in pain” was perceived as the first most stressful item by patients (M= 3.83). A total of 98.3% of CCU patients ranked their pain as mildly and extremely stressful (Table5.3). “Not being able to sleep” was ranked as the second most stressful item (M = 3.67). Some of the items in the ESQ are related to each other and can carry the same meaning; patients ranked these as a high priority. For

example, “being stuck with needles” was ranked the third most important stressor (M = 3.60), “being restricted by tubes/lines” ranked as the fifth most stressful item (M = 3.48), “ not being able to move your hands or arms because of an intravenous (IV) line” was ranked as the sixth most stressful item (M = 3.40), and “having tubes in your nose or mouth” was ranked as the seventh most stressful item by patients. Although the item “having tubes in your nose and mouth” was ranked with high priority by 45% of patients, it was ranked as not a stressful item by 55% of patients.

The item “only seeing family and friends for a few minutes each day” was ranked as the fourth most stressful item (M = 3.55) and was perceived as extremely stressful by 61.6% of CCU patients. Other items which showed a high concerns among patients included: “having the light on constantly”, ranked as the eighth most stressful item (M=3.37); “fear of death”, ranked as the ninth most stressful item (M = 3.23); and the last of the 10 high priority stress items was that “nurses and doctors talk too loudly” (M = 3.91).

5.3. Table: The most stressful items ranked by patients

ESQ No.	Stressors	Patient					
		Rank	M	SD	N	%	
32	Being in pain	1	3.83	0.42	1	1.7	
	Mildly stressful					8	13.3
	Moderately stressful					51	85
	Extremely stressful						
28	Not being able to sleep	2	3.67	0.54		3.3	
	Mildly stressful						26.7
	Moderately stressful						70
	Extremely stressful						
34	Being stuck with needles	3	3.60	0.62	30	6.7	
	Mildly stressful						50
	Moderately stressful						6.7
	Extremely stressful					22	36.6
22	Only seeing family and friends for a few minutes each day	4	3.55	0.62		6.7	
	Mildly stressful						31.7
	Moderately stressful						61.6
	Extremely stressful						
1	Being restricted by tubes/lines	5	3.48	0.68		6.7	
	Mildly stressful						36.6
	Moderately stressful						56.7
	Extremely stressful						
29	Not being able to move your hands or arms because of intravenous(IV) lines	6	3.40	0.59		1.7	
	Mildly stressful						55
	Moderately stressful						43.3
	Extremely stressful						
18	Having tubes in your nose or mouth	7	3.38	1.05	33	11.7	
	Mildly stressful						3.3
	Moderately stressful						30
	Extremely stressful						55
	Not stressful						

31	Having light on constantly	8	3.37	0.94		10
	Mildly stressful					
	Moderately stressful					
	Extremely stressful					
45	Fear of death	9	3.23	0.93		21.7
	Mildly stressful					
	Moderately stressful					
	Extremely stressful					
12	Nurses and doctors talking too loud	10	3.19	0.83	1	11.7
	Mildly stressful					
	Moderately stressful					
	Extremely stressful					
	Not stressful					

5.4 Nurses' Perception of Stress

At the end of the interview, CCU nurses, ranging from the CCU manager, senior staff, and staff nurses, were requested to rate the ESQ. Table 5.4 highlights the first 10 most stressful ESQ items ranked by nurses and arranged in ascending order based on the mean (M) and standard deviation (SD) of the results.

The item “fear of death” was ranked as the first most stressful item by nurses (M = 3.73). The item “being in pain” was ranked as the third most stressful item (M = 3.36; SD = 0.68), and “not being able to sleep” was ranked as the fourth most stressful item (M = 3.61; SD = 0.57). “Not being in control of yourself” was the tenth most stressful item ranked by nurses (M=3.29). Some items related to the delivery of care, for example the item “having the nurse constantly doing things around your bed” was ranked as the fifth most stressful item (M = 3.54) and “financial worries” was ranked as the sixth most stressful item by nurses (M = 3.50).

The rest of the items that were ranked by the nurse were in relation to mobility restrictions. The item “having tubes in your nose or mouth” was ranked as the second most stressful item (M = 3.71), “being stuck with needles” as the seventh

most stressful item ($M = 3.36$), and “not being able to move your hands or arms because of intravenous (IV) lines” as the ninth most stressful item ($M = 3.32$).

5.4. The most stressful items ranked by nurses

ES Q Items No.	Stressors	Nurses		
		Rank	Mean	SD
45	Fear of death	1	3.73	0.66
18	Having tubes in your nose or mouth	2	3.71	0.59
32	Being in pain	3	3.36	0.68
28	Not being able to sleep	4	3.61	0.57
17	Having nurse constantly doing things around your bed	5	3.54	0.84
48	Financial worries	6	3.50	0.58
34	Being stuck with needles	7	3.36	0.68
1	Being restricted by tubes/lines	8	3.32	0.62
29	Not being able to move your hands or arms because of intravenous(IV) lines	9	3.32	0.61
37	Not being in control of your self	10	3.29	0.71

On the other hand, nurses ranked some items as a low priority for patients from their own point of view (see Table 5.5). The item “only seeing family and friends for a few minutes each day” was ranked as the 35th most stressful item by nurses ($M = 2.71$). Other items like “nurses and doctors talk too loudly” was ranked as the 37th most stressful item ($M=3.71$) and “having light on constantly” was ranked as the 45th most stressful item by nurses ($M = 2.50$). Some of the items that were ranked as low priority by nurses were in relation to each other, for example “being cared for by an unfamiliar doctor” was ranked as the 42nd most stressful item ($M = 2.64$), “watching treatment being given to other patients” was ranked as the 48th most stressful item ($M = 2.43$) and “frequent physical examination by a doctor or nurse” was ranked as the 49th most stressful item ($M = 2.39$). Other items that were ranked

as low priority were in relation to the orientation of patients, for example “not knowing what day it is” was ranked as the 43rd most stressful item (M = 2.57) and “not knowing what time it is” was ranked as the 46th most stressful item (M= 2.71).

5.5 Comparison of the Mean Value between Patients and Nurses

Table 5.5 illustrates the mean value of each stressor perceived by the patients (P) and the nurses (N), arranged in descending order of priority as per the patients’ rating. Nurses showed a higher perception of the level of stress (M = 3.21) than patients (M = 2.29). Some of the ESQ items were ranked with almost the same priority for patients and nurses. The highest ranked stressor by patients was “being in pain” (M = 3.83), while this stressor was the third highest ranked stressor by nurses (M = 3.64). “Not being able to sleep” was the second highest ranked stressor by patients (M = 3.67), but the fourth highest stressor ranked by nurses (M = 3.61). “Being stuck with needles” was the third highest ranked stressor by patients (M = 3.60), but the seventh highest stressor ranked by nurses (M = 3.36). “Being restricted by tubes and lines” was the fifth highest stressor ranked by patients (M = 3.48), but the eighth highest for nurses (M = 3.32). “Not being able to move hands or arms because of intravenous (IV) lines” was the sixth highest stressor ranked by patients (M = 3.40) while it was ranked as the ninth highest for nurses (M = 3.32). “Having tubes in your nose or mouth” was the seventh highest ranked stressor by patients (M = 3.38) and the second highest ranked stressor by nurses (M = 3.71). “Fear of death” was the first highest stressor ranked by nurses (M = 3.71) while it was the ninth highest ranked by patients (M = 3.23).

Some of the ESQ items were ranked as high priority by patients while being perceived as a low priority by nurses. For example, “only seeing family and friends a few minutes per day” was the fourth highest stressor ranked by patients (M =

3.55), but was rated as a very low priority by nurses - the 35th highest stressor ranked on the list (M = 2.71). Similarly “having the light on constantly” was perceived as the eighth highest stressor item ranked by patients (M = 3.37), while it was rated as a low priority by nurses: the 45th highest ranked stressor (M = 2.50). “Nurses and doctors talk too loudly” was the tenth highest stressor ranked by patients (M = 3.19) while nurses ranked it as the 37th highest stressor (M = 3.71). “Financial worries” was ranked as the 14th highest stressor by patients (M = 3.12) while nurses ranked it as the sixth highest stressor (M = 3.50). Also patients ranked “hearing the telephone ring” as the 21st highest stressor (M = 3) while it was ranked as the 50th highest stressor by nurses (M = 2.32).

Other items were ranked as mild to moderate priority by patients and were perceived by nurses as of lower importance for patients. “Feeling that the nurses are watching the machines closer than they are watching you” was ranked as the 17th most stressful item by patients (M = 3.017) while nurses ranked it as the 28th most stressful item (M = 2.89). “Not knowing when to expect things to be done” was ranked as the 18th most stressful item by patients (M = 3.06) but was ranked as the 27th most stressful item by nurses (M = 2.93). “Being awakened by nurses” was ranked as the 23rd most stressful item for patients (M = 2.96) while nurses ranked it as the 41st most stressful item (M = 2.68). The item “being thirsty” was ranked as the 29th most stressful item for patients (M = 2.87) and it was almost the same for nurses who ranked it as the 30th most stressful item (M = 2.82).

Some items in Table 5.5 were ranked as mild to moderate by patients but still showed concern. When grouping these items we can see that they reflect the interaction between patient and nurse. The item “feeling that the nurse is watching

the machines closer than they are watching you” was ranked as the 17th most stressful item ($M = 3.017$), the item “not knowing when to expect things to be done” was ranked as the 18th most stressful item ($M = 3.06$), “having the nurse in too much of a hurry” was ranked as the 25th most stressful item ($M = 2.95$), “not having treatment explained to you” was ranked as the 27th most stressful item ($M = 2.92$), and “being pressurised to consent to treatment” was ranked as the 28th most stressful item ($M = 2.88$).

As mentioned earlier, patients ranked the item “nurses and doctors talk too loudly” as the tenth highest stressor ($M = 3.19$). While this item reflects noise, patients ranked some other noise sources with mild to low priority. “Hearing the telephone ring” was ranked as the 21st highest stressor ($M = 3.0$) and the item “hearing the buzzer sounds and alarms from the machinery” was ranked as the 32nd highest stressor in the ranking table ($M = 2.83$) (Table 5.5).

On the other hand, patients ranked some items as low priority. Some of these items are related to the delivery of care: “frequent physical examination by doctor or nurse” was ranked as the 41st highest stressor ($M = 2.66$), “being cared for by unfamiliar doctors” was ranked as the 48th highest stressor ($M = 2.23$), and “watching treatment being given to other patients” was ranked as the 50th highest stressor (the least stressful) by patients ($M = 1.85$). Other items that were ranked with low priority by patients reflected the orientation concept, for example “not knowing what time it is” which was ranked as the 42nd highest stressor ($M = 2.53$) and “not knowing what day it is” as the 47th highest stressor ($M = 2.38$).

On the other hand, some stressors were perceived as high priority by nurses and low priority by patients. “Not being able to communicate” was ranked as the 11th highest stressor by nurses (M = 3.25) but as the 20th highest stressor by patients (M = 3.01). “Having the nurse constantly doing things around your bed” was ranked as the fifth highest stressor by nurses (M = 3.45) while patients ranked it as the 31st highest stressor (M = 2.85). “Fear of AIDS” was perceived to be the 12th highest stressor among nurses (M = 3.25) but it was ranked as the 33rd highest stressor by patients (M = 2.83). “Having strange machines around you” was ranked by nurses as the 13th highest stressor (M = 3.21) while patients ranked it as the 36th highest stressor (M = 2.78). “Not knowing where you are” was perceived to be the 20th highest stressor ranked among nurses (M = 3.04) while it was ranked as the 45th highest stressor by patients (M = 2.42).

5.5. Table: stressors' ranking comparison between patients and nurses in CCU

Items	Patient			Nurse's		
	Rank	M	SD	Rank	M	SD
Being in pain	1	3.83	0.42	3	3.64	0.62
Not being able to sleep	2	3.67	0.54	4	3.61	0.57
Being stuck with needles	3	3.60	0.62	7	3.36	0.68
Only seeing family and friends for a few minutes each day	4	3.55	0.62	35	2.71	1.01
Being restricted by tubes/lines	5	3.48	0.68	8	3.32	0.62
Not being able to move your hands or arms because of intravenous(IV) lines	6	3.40	0.59	9	3.32	0.61
Having tubes in your nose or mouth	7	3.38	0.90	2	3.71	0.59
Having light on constantly	8	3.37	0.6	45	2.50	0.84
Fear of death	9	3.23	1.01	1	3.71	0.66
Nurses and doctors talking too loud	10	3.19	0.70	37	3.71	0.81
Having no privacy	11	3.18	1.09	17	3.14	0.97
Not being in control of your self	12	3.13	0.85	10	3.29	0.71
Hearing other patient crying out	13	3.13	0.95	16	3.18	0.61
Financial worries	14	3.12	0.99	6	3.50	0.58
Having nurse use words you can not understand	15	3.11	0.86	14	3.18	0.72
Not knowing the length of stay in the ICU	16	3.10	0.84	18	3.14	0.80
Feeling the nurse are watching the machines closer than they have watching you	17	3.017	0.91	28	2.89	0.83
Not knowing when to expect things to be done	18	3.06	0.76	27	2.93	0.72

Hearing people talking about you	19	3.04	0.88	15	3.18	0.67
Not being able to communicate	20	3.01	1.06	11	3.25	0.93
Hearing the telephone ring	21	3.00	0.86	50	2.32	0.94
Missing your husband or wife	22	2.96	1.13	34	2.75	0.8
being awakened by nurse	23	2.96	1.02	41	2.68	0.55
Hearing your heart alarm go off	24	2.95	0.99	24	3.00	0.72
Having nurse in too much of a hurry	25	2.951	0.95	32	2.82	0.90
Being unable to fulfil family roles	26	2.950	0.90	25	2.96	0.74
Not having treatment explained to you	27	2.92	0.81	22	3.04	0.74
Being pressurized to consent to treatment	28	2.88	4.00	21	3.04	0.69
Being thirsty	29	2.87	0.95	30	2.82	1.02
Having your blood pressure taken often	30	2.86	0.96	29	2.86	0.85
Having nurse constantly doing things around your bed	31	2.85	0.95	5	3.54	0.84
Hearing the buzzer sound and alarms from the machinery	32	2.83	0.78	19	3.11	0.79
Fear of AIDS	33	2.83	1.34	12	3.25	0.79
Being board	34	2.82	1.02	33	2.79	0.69
Having to wear oxygen	35	2.80	1.05	39	2.68	0.90
Having strange machines around you	36	2.78	0.92	13	3.21	0.79
Unfamiliar and unusual noises	37	2.75	0.91	26	2.96	0.74
Being a wear of unusual smells around you	38	2.70	0.69	36	2.71	0.89
Not having the nurse introduce themselves	39	2.68	0.77	47	2.46	0.83
Having men and women in the same room	40	2.68	1.19	38	2.68	0.98
Frequent physical examination by doctor or nurse	41	2.66	1.17	49	2.39	1.07
Not knowing what time is it	42	2.53	0.75	46	2.71	0.89
Uncomfortable bed or pillow	43	2.50	1.18	31	2.82	0.94
Being in a room which is too hot or cold	44	2.48	1.05	23	3.04	0.69
Not knowing where you are	45	2.42	0.94	20	3.04	0.88
Seeing intravenous(IV)bags over your head	46	2.42	0.93	40	2.68	0.86
Not knowing what day is it	47	2.38	0.83	43	2.57	0.84
Being cared by unfamiliar doctors	48	2.32	1.05	42	2.64	0.95
Having to look at the pattern of tiles on the ceiling	49	2.07	1.63	44	2.50	1.04
Watching treatment being given to other patients	50	1.85	1.02	48	2.43	1.03
		2.29			3.21	

5.6 Physical versus Psychological Stressors

Table 5.6 presents the physiological stressors ranked by patients and nurses and shows some consistency in the findings between the two groups. The ranking of the physiological stressors represents about 60% of the first 10 ESQ stressors (Table 5.3) that were ranked patients ranked as high priority. Table 5.7, which presents the psychological stressors, shows a variance in ranking between the groups and represents only 40% of the stress items in Table 5.3. This indicates that both patients' and nurses' focus is central. Although the mean value of the physiological

stressors for patients and nurses was almost equal, Table 5.5 demonstrates that there are differences in the ranking of stressors in both groups with no single matching stressor indicated by patients and nurses.

5.6. Table: Physical stressors ranking comparison between patients and nurses in CCU

Items	Patient			Nurse's		
	Rank	M	SD	Rank	M	SD
Being in pain	1	3.83	0.42	3	3.64	0.62
Not being able to sleep	2	3.67	0.54	4	3.61	0.57
Being stuck with needles	3	3.60	0.62	7	3.36	0.68
Being restricted by tubes/lines	5	3.48	0.68	8	3.32	0.61
Not being able to move your hands or arms because of intravenous(IV) lines	6	3.40	0.59	9	3.32	0.61
Having tubes in your nose or mouth	7	3.38	0.90	2	3.71	0.59
Having to wear oxygen	35	2.80	1.05	39	2.68	0.90
Being in a room which is too hot or cold	44	2.48	1.05	23	3.04	0.69
		2.96			2.96	

In terms of psychological stressors, despite the higher total mean value of the psychological stressors perceived by nurses (M = 2.94) compared to that perceived by patients (M = 2.84), nurses ranked the psychological stress items with a larger variance to patients' needs. For example patients ranked "only seeing family and friends for a few minutes each day" as the fourth highest stressor (M = 3.55) (Table 5.3) while nurses ranked it as the 35th highest stressor (M = 2.71). Interestingly,

nurses ranked the item “fear of death” as the number one stressor (M = 3.71) while patients ranked it as the ninth highest stressor (M = 3.23) giving a difference of eight patient psychological or even physical needs. Also patients ranked “having the light on constantly” as the eighth highest stressor (M = 3.37) while nurses ranked it as the 45th highest stressor (M = 2.50).

5.7 Table: psychological stressors' ranking comparison between patients and nurses in CCU

Items	Patient			Nurse's		
	Rank	M	SD	Rank	M	SD
Only seeing family and friends for a few minutes each day	4	3.55	0.62	35	2.71	1.01
Having light on constantly	8	3.37	0.6	45	2.50	0.84
Fear of death	9	3.23	1.01	1	3.71	0.66
Nurses and doctors talking too loud	10	3.19	0.70	37	3.71	0.81
Having no privacy	11	3.18	1.09	17	3.14	0.97
Not being in control of your self	12	3.13	0.85	10	3.29	0.71
Hearing other patient crying out	13	3.13	0.95	16	3.18	0.61
Financial worries	14	3.12	0.99	6	3.50	0.58
Having nurse use words you can not understand	15	3.11	0.86	14	3.18	0.72
Not knowing the length of stay in the ICU	16	3.10	0.84	18	3.14	0.80
Feeling the nurse are watching the machines closer than they have watching you	17	3.017	0.91	28	2.89	0.83
Not knowing when to expect things to be done	18	3.06	0.76	27	2.93	0.72
Hearing people talking about you	19	3.04	0.88	15	3.18	0.67
Not being able to communicate	20	3.01	1.06	11	3.25	0.93
Hearing the telephone ring	21	3.00	0.86	50	2.32	0.94
Missing your husband or wife	22	2.96	1.13	34	2.75	0.79
being awakened by nurse	23	2.96	1.02	41	2.68	0.55
Hearing your heart alarm go off	24	2.95	0.99	24	3.00	0.72
Having nurse in too much of a hurry	25	2.951	0.95	32	2.82	0.90
Being unable to fulfil family roles	26	2.950	0.90	25	2.96	0.74
Not having treatment explained to you	27	2.92	0.81	22	3.04	0.74
Being pressurized to consent to treatment	28	2.88	4.00	21	3.04	0.69
Having your blood pressure taken often	30	2.86	0.96	29	2.86	0.85
Having nurse constantly doing things around your bed	31	2.85	0.95	5	3.54	0.84
Hearing the buzzer sound and alarms from the machinery	32	2.83	0.78	19	3.11	0.79
Fear of AIDS	33	2.83	1.34	12	3.25	0.79
Being board	34	2.82	1.02	33	2.79	0.69
Having strange machines around you	36	2.78	0.92	13	3.21	0.79
Unfamiliar and unusual noises	37	2.75	0.91	26	2.96	0.74
Being a wear of unusual smells around you	38	2.70	0.69	36	2.71	0.89
Not having the nurse introduce themselves	39	2.68	0.77	47	2.46	0.83
Having men and women in the same room	40	2.68	1.19	38	2.68	0.98
Frequent physical examination by doctor or nurse	41	2.66	1.17	49	2.39	1.07

Not knowing what time is it	42	2.53	0.75	46	2.71	0.89
Uncomfortable bed or pillow	43	2.48	1.05	23	3.04	0.69
Not knowing where you are	45	2.42	0.94	20	3.04	0.88
Seeing intravenous(IV)bags over your head	46	2.42	0.93	40	2.68	0.86
Not knowing what day is it	47	2.38	0.83	43	2.57	0.84
Being cared by unfamiliar doctors	48	2.32	1.05	42	2.64	0.95
Having to look at the pattern of tiles on the ceiling	49	2.07	1.63	44	2.50	1.04
Watching treatment being given to other patients	50	1.85	1.02	48	2.43	1.03
		2.84			2.94	

5.7 The Effect of Sampling Characteristic on the Perception of Stress

Table 5.8 presents the effect of sampling characteristics on the level of perception based on the mean value (M). Patients' perceptions of CCU stressors was higher among African patients (M = 2.99) followed by European patients (M = 2.94) and lastly Asian patients (M = 2.90). Female patients also perceived stress (M = 2.96) more than male patients (M = 2.85). Similarly, married patients (M = 2.93) expressed stress more than single patients (M = 2.91) and widows (M = 2.88) more than divorced patients (M = 2.61).

A higher level of stress was perceived among patients aged between 34 and 45 years (M = 2.99) compared to patients aged between 45 and 55 years (M = 2.92) or above 55 years old (M = 2.8). Patients who had previously been admitted to a CCU had higher stress levels than patients admitted for the first time. The mean value was 2.79 compared to the mean value of 2.63 of patients admitted for the first time to a CCU. Patients who have been admitted through emergency departments perceived higher levels of stress (M = 3.0) than patients referred from another hospital (M = 2.9) or even transferred from the same hospital (M = 2.45).

Female CCU nurses perceived a higher level of stress ($M = 3.01$) compared to males ($M = 2.87$). Nurses holding Masters Degrees and a PhD had a mean value of 3. This was lower among nurses who hold a bachelor degree or diploma with values of 2.94 and 2.93 respectively. Nurses with less than one year's experience in a CCU perceived a higher level of stress than nurses with experience of between one and five years in a CCU ($M = 3.18$ and $M = 2.7$ respectively). In contrast, nurses with CCU experience of between 10 and 15 years had a mean value of 2.5. Also the level of perception to stress was found to be higher among nurses with previous medical ICU experience ($M = 3.14$) compared to nurses with surgical ICU experience ($M = 2.84$).

As presented earlier, nurses' perceptions of stress were higher than those of patients. This finding was more prominent in nurses employed at Site (1) ($M = 3.58$) compared to Site (2) ($M = 3.37$).

5.8. Table: the effect of sampling characteristics on the level of stress perception

Sampling characteristics	(M)
Patient:	
• Gender male female	2.857 2.966
• Ethnicity African European Asian	2.99 2.94 2.90
• Marital status Married Single Widow divorced	2.93 2.92 2.88 2.61
• Age 35-45 years 45-55 years 55 and above	2.99 2.92 2.8
• Previous admission to CCU yes No	2.79 2.63
• Rout of admission to CCU Emergency department Referral from other hospital Referral from hospital floor	3.00 2.9 2.45
Nurses:	
Gender Male Female	2.87 3.01
Educational level Diploma Bachelor Master +PhD	2.93 2.90 3.00
CCU experience Less than one year 1-5 years 5-10 years 10-15 years	3.18 2.7 2.6 2.5
Medical ICU experience - 6 months + 6 months	3.14 2.76
Surgical ICU experience - 6 months + 6months	2.84 2.54

5.8 Participant's Comments

The questionnaire (Appendix I) includes additional questions which allow patients and nurses to comment on the factors they feel the National Health Service (NHS) should focus and be concerned about. The second part deals with what they feel needs to be added to the ESQ and the third part deals with any additional comments they felt should be added to the experience.

5.8.1 Patients' Comments

Table 5.9 presents patients' comments according to their socio-demographic characteristics. Ten patients (16.7%) above the age of 55 years commented that they did not find the items in the ESQ too stressful. They perceived that having to wear an oxygen mask, having their blood pressure taken frequently, frequent physical examination by doctors and nurses, and nurses doing things constantly around you were necessary to assist with their recovery. Sixteen patients (26.7%), 10 females and six males, felt uncomfortable when they were transferred out of the CCU. However, while three patients commented that it was difficult to quantify stress, nearly all the patients (98.3%) commented that the CCU is a noisy environment. One female patient (1.7%) between the age of 45 and 55 gave no comments. Twenty-five patients (41.7%) aged below 55 years (20 females and five males) commented on the need to improve patient–nurse communication. Half of the sample (50%) was calling for a private single room rather than the available open designed CCU. Twenty of these samples were Asian females and the remaining 10 patients comprised six Europeans and four Africans. One of the most important

comments made by patients concerned the need for family and friends to take part in the patient's care. This comment was offered by all patients participating in this study.

5.9. Table: patients comments according to socio-demographic characteristics:

Patient comments	Socio-demographics characteristics	n	%
• Not stressful tool	- Age: above 55 years	10	16.7
Noisy CCU	- Age: All age groups	59	98.3
• Crowded CCU	- Age: All age groups	45	75
• Need for single room	- Age: below 55 years - Gender: Female male - Ethnicity: Asian African European	30 3 0 2 0 1 0 2 0 4 6	50
• Staff should communicate more with patient	- Age: below 55 years - Gender: Female Male	25 2 5 2 0 5	41.7
• Family and friends should take part in patients care	- Age: 35-45 years 45-55 years Above 55 years	60 2 0 2 2 1 8	100 33.3 36.7 30
• No comment	- Age: 45-55 years - Gender: Female - Education: Below high school	1	1.7
• Transferred to ward not good	- Age: below 55 years - Gender: Female Male	16 1 6 1 0 6	26.7

5.8.2 Nurses' Comments

Table 5.10 represents the comments of nurses according to their socio-demographic characteristics. Three nurses (10.7%) gave no comments to the scale or interview and these nurses had less than one year's experience of working in a CCU. Ten nurses who hold bachelor degrees (28.6%), eight nurses with one to five years' experience in a CCU and two nurses with more than five years' experience in a CCU commented that there should be a discharge plan for patients. Nine nurses who hold bachelor degrees (32.1%), two of whom with more than five years' experience in a CCU and seven nurses were with more than one year's experience in a CCU commented on the importance of family attendance in improving the patient's care. In contrast 10 nurses (35.7%), of whom seven have less than one year's experience in a CCU and three have more than one year's experience in a CCU, argued about the benefits of the attendance of family and friends for the patient and CCU staff. All nurses identified the continuous shortage of CCU staff as a problem. Three nurses with more than five years' experience in a CCU commented on the need for CCU guidelines covering all patients' needs.

5.10. Table: Nurses comments according to socio-demographic characteristics:

Nurses comments	Socio-demographic characteristics	n	%
• No comments	- CCU experience: Below one year	3	10.7
• Discharge plan	- CCU experience: 1-5 years	10 8	28.6
	Above 5 years	2	
	- educational level: bachelor degree	10	

<ul style="list-style-type: none"> • Family attendance - Yes 	<ul style="list-style-type: none"> - CCU experience: More than 5years. More than one year - Educational level: bachelor degree 	9 2 7 9	32.1
	<ul style="list-style-type: none"> - No - CCU experience: Below 1 year More than one year - Educational level: Diploma High level of education (Master + PhD) 	10 7 3 9 1 8	35.7
<ul style="list-style-type: none"> • Shortage of staff 	<ul style="list-style-type: none"> - All the staff 	28	100
<ul style="list-style-type: none"> • CCU guidelines 	<ul style="list-style-type: none"> - CCU experience: more than 5 years More than 1 year - Educational level: bachelor degree Master+ PhD 	3 2 1 2 1	10.7

5.9 Available NHS Clinical Guidelines

There are no specific guidelines strictly followed by CCU staff in both trusts. The available guidelines from the National Institute for Health and Clinical Excellence (NICE) that are applied in the CCU at the Northwest London Hospitals and the Hillingdon Acute Trusts are:

- NICE clinical guideline 50: “Acutely ill patients in hospital: recognition of and response to acute illness in adults in hospital issued in July 2007” (Appendix K).
- There are numerous guidelines on pain available published by NICE: Chest pain of recent onset; Assessment and diagnosis of recent onset chest pain or discomfort of suspected cardiac origin (Full Guideline Final Draft - March 2010).

5.10 Discussion

This was the first study of its kind undertaken in the UK to compare the perception of stressors of acute coronary care environments from the patients' and nurses' perspectives and the effect of socio-demographic characteristics on the level of perception. The findings revealed important information regarding stressors in acute settings in the UK and have laid the foundation for further studies.

There were similarities related to the nature of stressors ranked as stressful in the acute coronary care units by both study groups. However, there were also significant differences in the level of stressors perceived by each group. Nevertheless, the findings of this study appear to be consistent with the previous research studies conducted in the other cultures within the context of the purpose of this study (Cochran & Ganong, 1989; Cornock, 1998; Novaes et al., 1999; So & Chan, 2004; Pounds et al., 2009; Yava et al., 2010).

5.10.1 Patients' Perception of Stress

Pain and the CCU have been separate fields of research for a long time. It was only in the late 1980s that research targeting pain in ill patients began (Puntillo, 2003). Since then, significant scientific advancements have been made in pain assessment and management in the CCU. Pain is now known to be an important stressor in acute settings (Bergbom-Engberg & Haljam, 1989; Hallenberg et al., 1990; Turner et al., 1990; Puntillo, 1990, 1994). Numerous sources of pain have been identified and developed due to invasive equipment, nursing and medical interventions, acute illness and immobility (Murray, 1990; Christoph, 1991; Hamill-Ruth & Marohn, 1999; Kwekkeboom and Herr, 2001). Suctioning has been documented as being the most painful procedure that critically ill patients undergo (Puntillo et al., 2001; Stanik-Hutt et al., 2001). It is therefore not surprising that moderate to severe pain is experienced by all patients in the CCU (Desbiens et al., 1996; Ferguson et al., 1997; Puntillo, 1990, 1994; Puntillo & Weiss, 1994; Puntillo et al., 2001; Stanik-Hutt et al., 2001; Valdix & Puntillo, 1995; Whipple et al., 1995).

In this study, 98.3% of the patients mentioned that they experienced moderate to severe pain while being treated in the CCU (Table 5.3). Previous studies have also

shown that the pain intensity is moderate to severe for more than 50% of CCU patients (Desbiens et al., 1996; Ferguson et al., 1997; Puntillo, 1990, 1994; Puntillo & Weiss, 1994; Puntillo et al., 2001; Stanik-Hutt et al., 2001; Valdix & Puntillo, 1995; Whipple et al., 1995). Such results show that pain is still not adequately relieved in the CCU. All CCU patients should be treated when pain is suspected (Herr et al., 2006).

Pain is one of the significant factors that negatively affects sleep and disturbs the normal sleep and wakefulness cycle (Bucher, 2004). Wong and Arthur (2000) reported that patients in critical settings not only complained of pain from the wound site, but also stated that they had back pain, and wanted to be given a massage before sleep and pillows to help with positioning. The results of studies by Novaes et al. (1999) and Hweidi (2005) showed that patients have widespread experiences of pain. This is consistent with the data obtained in this study as pain was ranked as the highest stressor by patients.

In this study the ESQ item “not being able to sleep” was ranked as the second highest stressor by patients and about 70% of patients ranked it as extremely stressful (Table 5.3). Sleep problems in CCU patients is very common (Freeman et al., 2001; Nordstrom, 2003, Tobin, 2004; Stockert, 2005) as CCUs have complex biomedical equipment for continuous monitoring of patients who have serious physical conditions in order to support their vital functions and which are used by health professionals and nurses to give specialised treatment and care (Demir & Dramali, 2002; Oztekin & Akyolcu, 2003). Patients in the CCU commonly experience sleep disturbances and state that these problems continue throughout their stay in the CCU (Freedman et al., 1999). Changes in the normal sleep patterns

and rest activities can be related to the care environment of the CCU, the nature of the illness, nursing interventions and the effect of medication (Fontaine, 1998; Bourne & Mills, 2004; Tracy, 2006). Respectively noise from the environment or from voices, having the light on constantly and being attached to devices were found to be factors that affect sleep (Ugras & Oztekin, 2007).

Patients may be awakened from sleep by noise, anxiety, frequent treatment, nursing care interventions, and from monitors (Bucher, 2004; Tracy, 2006). Other factors that contribute to sleep disturbance in CCU patients include acute illness (Hilton, 1976; Aurell & Elmqvist, 1985; Broughton & Baron, 1978; Knill et al., 1990), light and patient discomfort (Krachman et al., 1995). Noxious stimuli that contribute to patient discomfort and arousal include increased respiratory effort (Gleeson et al., 1990; Preas et al., 2001), hypoxemia and hypercapnia (Gleeson et al., 1990). Patients with acute chest pain who are evaluated in the coronary care unit (CCU) found the unit generally stressful. Apart from their medical condition with an activated sympathetic system, they may also be affected by environmental conditions such as unexpected noise, which is long recognised to have a negative influence on the rehabilitation of patients (Hagerman et al., 2005). All patients are monitored with a computerised system for ECG monitoring and/or hemodynamic with different automatic alarms for critical values.

It has also been observed that the lack of movement increases discomfort in CCU patients, as patients are unable to maintain an appropriate position (Fontaine, 1998; Bucher, 2004). In this study stressors such as “being stuck with needles” (which was ranked as the third highest stressor), the item “being restricted by tubes/lines” (which was ranked as the fifth highest stressor), the item “not being able to move

your hands and arms because of intravenous (IV) lines” (which was ranked as the sixth highest stressor) and the item “having tubes in your nose or mouth” (which was ranked as the seventh highest stressor) all reflect immobility and lack of movement.

The high percentage obtained from this study emphasises the importance of ensuring that patients receive support from their families and friends. Patients ranked the item “only seeing family and friends for a few minutes each day” as the fourth highest stressor (Table 5.3). So and Chan (2004) and Hweidi (2005) indicated that reductions of the number of visits from family members and friends were a source of stress for patients.

“Fear of death” was ranked the ninth highest stressor by patients (Table 5.3) and can affect normal sleep. More than half of the patients (55%) commented that sleep was affected due to their concerns over the results of their disease. It has been reported in previous research that experiencing an illness and a process of health deterioration can lead to the development of fears in patients about death, loss of work and family support, and being unable to fulfil their family roles (Urban, 1998). Similarities were found in the work of Wong and Arthur (2000) who stated that fear and anxiety related to the illness process and led to poor recovery and the constant fear of death.

In this study, being in a noisy environment was reflected by the item “doctors and nurses talk too loudly” which was one of the environmental factors that affected the sleep patterns of about 68% of patients in the CCU. This study shows similarity with other studies: Topf (1992), Topf et al., (1996), Kittinger et al. (1993),

Christensen (2005, 2007), and Hagerman et al. (2005). Patients in the CCU are woken up frequently by health care professionals for assessment and treatment activity; these situations cause problems with their sleep patterns (Fontaine, 1998; Tamburri et al., 2004).

It appears that staff conversations represented in the item “doctors and nurses talk too loudly” tended to be more noticeable for patients as a source of noise than the CCU equipment such as monitoring machines and oxygen therapy. What is of interest is that this phenomenon of staff conversations influencing the noise levels within the acute settings has been reported previously and yet appears to be an ongoing problem within this environment (Bentley et al., 1977; Hilton, 1985; Kam et al., 1994; Meyer-Falcke et al., 1994; Christensen, 1997; Kahn et al., 1998; Chmiel et al., 2004). In common, these studies constantly identified that the impact of noise in acute settings was created by machinery and staff conversations. Disturbingly, in this study “doctors and nurses talking too loudly” was also commented on by some patients but it was unrelated to the patient condition.

Minckley (1968), Woods and Falk (1974), Seidlitz (1981) and Kryter (1994) found that high levels of noise consistently disturbed patients’ sleeping patterns, increased the need for pain relief as well as elevating cardiovascular functioning, e.g. peripheral vasoconstriction and tachycardia. Indeed, Andren (1980) found that exposure to noise was related to patients’ elevations in patients’ cardiac functioning (increased diastolic blood pressure, increased systemic vascular resistance and various changes in heart rate). Noisy CCU environments during acute illness may have important physiological and psychological consequences. As the re-hospitalisation rate at three months was significantly higher in the group of patients

exposed to bad acoustics, it could be proposed that this also may have a negative impact on the rehabilitation period (Topf, 2000).

Patients are, when needed, transported to the laboratories for further investigations. Laboratory testing is partly performed in a point-of-care setting in a corner of the CCU. This and other logistics, such as regular cleaning of the patient rooms, exchange of beds and laundry, etc. creates a noisy and somewhat turbulent atmosphere. Nearly four to five nurses are employed at the unit scheduled either for morning, evening or night shifts. During the study period, the acoustic environment was changed in the patient rooms and the main work area of the unit where the staff make most of the decisions and monitoring of patients

5.10.2 Nurses' Perception of Stress

Several ESQ items were perceived similarly by both patients and nurses but had differences in the perceived ranks, e.g. "having the nurse constantly doing things around your bed" was ranked as the 30th highest stressor by patients at the same time and not far from patients as the 20th highest stressor. Nurses felt that they impeded the patients' privacy all the time by performing procedures or giving treatment (Polkki et al., 2010). Financial worries which took priority in the nurses' ranking were related to patients' concern for their families and their loved ones more than fears about the cost of treatment (Polkki et al., 2010). In the UK treatment on the NHS is free of charge.

The item "not being in control of yourself" which reflects patients' autonomy was ranked as the tenth highest stressor by patients. This ranked item concurs with So and Chan (2004) as nurses ranked "not being in control of yourself" as the ninth highest environment stressor. While nurses and patients ranked the items related to

mobility restrictions such as “being stuck with needles”, “having tubes in your nose and mouth” and “not being able to move your hands and arms because of intravenous (IV) lines” as the top ranked stressors. This reinforced and explained the finding that “not being in control of yourself” was a major concern for the patient; these results concurred with the previous reports by So and Chan (2004), and Pound et al. (2009).

5.10.3 Comparison of the Mean Value between Patients and Nurses

From Table 5.5 we can see that there is some consistency in the perception of stress between patients and nurses in the ranking of some ESQ items with high priority. “Being in pain” was considered to be the major stressor by both groups. This result is congruent with previous studies (Novaes et al., 1997; So and Chan, 2004; Pound et al., 2009). Coronary care patients are particularly vulnerable to pain, possibly due to the disease process and/or invasive treatment procedures. Effective pain management can only be achieved with accurate and objective pain assessment (Blenkharn & Siobhan, 2002; Polkki et al., 2010), reliable behavioural and physiological indicators to establish the presence of pain (Blenkharn & Siobhan, 2002), and the provision of the best possible analgesia for the patient (Pound et al., 2009). Adequate pain control was perceived as necessary to provide patients with comfort, promote rest and sleep, and improve compliance with nursing and medical interventions (Wong & Arthur, 2000).

With respect to the item “not being able to sleep”, which was ranked as the second highest stressor by patients and as the fourth highest by nurses, it would be reasonable to suggest that reducing the noise levels in the unit can be reduced by making the nurses aware of the importance of sleep to the patient. Once again,

stressful CCU environments represented by loud and unfamiliar noises, flashing lights, noxious smells, lights on 24 hours a day, being awakened by nurses, nurses and doctors talking too loudly, lack of privacy and separation from family can all contribute to sleep deprivation and sensory overload (Cochran & Ganong, 1989; Yava et al., 2010).

Although these findings explain why patients perceived “having the lights on constantly” as the eighth highest stressor in the list, nurses ranked it as the 45th highest stressor because they believe that light is necessary to perform CCU procedures. Distinguishing between nurses working during morning, afternoon and night shifts failed to make any difference to their perceptions of light (e.g. a nurse on a night shift performs the same activities as those on morning and afternoon shifts).

The items “being stuck with needles”, “being restricted by tubes and lines” and “having tubes in your nose or mouth” were ranked as the highest stressors in the list by both groups. This is consistent with previous studies (Cochran & Ganong, 1989; Cornock, 1998; So & Chan, 2004). It is easily understood that some mandatory devices were required to be attached to patients, such as monitoring cables, nasogastric tubes, and urinary catheter which may impose a sense of immobility on the patients (Ballard, 1981). To feel restricted or stuck by needles is contrary to the natural state of liberty and freedom of movement (van de Leur et al., 2004).

“Being thirsty” was ranked low by nurses and patients (nurses ranked this item as the 30th highest stressor and patients ranked it as the 29th highest stressor). This result differs in the ranking of this item in the previous studies. “Being thirsty” was

perceived by patients as the second most important stressor and it was also ranked within the top five stressors in published data (Cochran & Ganong, 1989; Cornock, 1998; Hweidi, 2007; So & Chan, 2004). In the current study and in similar studies, nurses ranked this item within a lower range (Biancofiore et al., 2005; Novaes et al., 1997; So & Chan, 2004). This shows that nurses perceived “being thirsty” less of a priority. Furthermore, in the CCU environment oral intake, in general, is not highly restricted like ICUs (Marosti & Dantas, 2006). The thirst problem could be reduced through simple solutions such as mouth care and mouth hydration (Hweidi, 2007).

The item “only seeing family and friends for a few minutes per day” was ranked as the fourth highest stressor by patients, but as the 35th highest stressor by nurses. This is because around 55% of patients are married and it is likely that their answers are affected by their psychological needs. Patients felt that time and lengths of visits by family and friends were insufficient, especially due to the seriousness of the illness and the possible risk of death. Nurses were satisfied with the visiting schedules and we connect this result with the nurses’ comments that the CCU can be a crowded environment. Also nurses felt that the CCU is a place where the patient should rest and have a good sleep in order to promote patients’ prognoses; however, having family and friends visit many times per day may negate this mission.

The item “fear of death” attained the first rank on the nurses’ list, which in fact reflects nurses’ fear of patient death, as this would be the ultimate failure of patient care. Although the visit to the CCU was considered stressful by patients, it did not achieve as high a rank for patients as for nurses, possibly because the patient has an unerring faith in the medical profession’s ability (Cornock, 1998). Fear of death, which was perceived as the most important stressor by patients and nurses, was also

ranked the most important stressor in a recent similar study (Pang & Suen, 2008). This item was ranked fifth by patients and fourth by nurses in Cornock's (1998) study. It seems that fear of death is an important stressor for both patients and nurses.

Moreover, patients in the CCU can sometimes witness the death of other patients and this can increase the anxiety level of these patients (Wong & Arthur, 2000). It is possible that CCU nurses may perceive more stress related to death and dying than other nurses (Foxall et al., 1990). Nurses also said that they feel grief as well as unease and inadequacy when dealing with dying patients (Pang & Suen, 2008). The assessment of patients' perceptions, including those of fear and anxiety, may help to identify patients at risk of developing psychological stress (Samuelson et al., 2007). In addition, it could be helpful for nurses to encourage patients to express their feelings of anxiety and to consider this fear as an important source of stress. At the same time, there is a need for nurses to be better equipped in communication and counselling skills (Alasad & Ahmed, 2004).

The study revealed that item "not being able to communicate" was ranked highly in the nurses' list. The importance of not being able to communicate is described by some nurses as a terrifying experience for patients with inhibited decision-making about treatment in the CCU. Nurses believed that effective verbal communication was an essential part of the caring process (Alasad & Ahmed, 2005). Weimann and Giles (1988) argued that communication allows access to, and exchange of, information and emotional support during stress. This lack of quality and satisfying communication could have serious implications for the physical and psychological health of ill patients (Elliott & Wright, 1999; Happ, 2001). Nurses focusing on

communication with CCU patients may explain why patients perceived communication as a lower priority than nurses.

The item “nurses constantly doing things around your bed” was ranked highly by nurses compared to that by patients; it was ranked fifth and 31st respectively. The nurse feels they are disturbing the patient’s privacy all the time in order to perform procedures or to give treatment (Polkki et al., 2010) while for patients the perception differs. Patients feel psychologically assured when nurses are providing care and meeting their physical and emotional needs (Yava, 2010).

Psychological stressors such as “not knowing what time it is”, “not knowing where you are” and “not knowing what day it is”, all of which patients found least stressful, are mainly related to time and location orientation. It has been suggested by Yava (2010) that this result may exist because patients are well informed about the time and location of the care, and are comfortable with both. Another possible reason may be that patients do not perceive a lack of knowledge about time and date as stressful because they are simply too ill to care.

Less important factors identified by patients included “being pressured to consent to treatments” and “the fear of AIDS”. Cornock (1998) also conducted studies including these items, and these items were also found to be the least stressful items. The item “being pressured to consent to treatments”, which patients found less stressful, might be the result of patients accepting the treatment offered and relying upon the medical staff for medical care. In this study “fear of death” was ranked as a higher priority for nurses than patients. This leads us to infer that giving consent to treatment may enhance the acceptance of treatment and prognosis. Nurses, when

they ranked the “fear of AIDS” stressor, were thinking about AIDS and all other transmitted diseases in hospital (nosocomial infections and hospital-acquired infections).

In a recent study, “fear of AIDS” was modified to “fear of hospital-transmitted diseases”, and, thus, this item was found to be a major stressor. Coronary care units and intensive care units (ICUs) can be high-risk areas for the spread of nosocomial infections because of the crowding of patients with high levels of disease acuity, the likelihood of person-to-person transmissions of microorganisms and the presence of more complex patients who require prolonged hospitalisation (Pang & Suen, 2008). Thus, the item “fear of hospital-transmitted diseases” should be added to the ESQ for future research (Pang & Suen, 2008).

5.10.4 Physical versus Psychological Stressors Ranking

Similar to the findings of previous studies (Cochran Ganong, 1989; Novaes et al., 1997; Cornock, 1998; Novaes et al., 1999; So & Chan, 2004; Biancofiore et al., 2005; Pang & Suen, 2008), nurses have considerably higher stress perceptions than patients in all the items. Nurses tended to rate the items as more stressful, perhaps overemphasising the stressful nature of the CCU (Pang & Suen, 2008). It may be that nurses can project their feelings onto patients. The stress they perceive in their patients may actually be the stress they experience in such situations.

Another possible explanation for the high scores produced by nurses may be that, while placing themselves in the patient’s shoes they ranked the items aided by their own knowledge and experience a form of “inside information”. Thus, as patients, they would feel more stressed because they know the potential difficulties and complications (Cornock, 1998).

Nursing ill patients was perceived as one of the major sources of stress (So & Chan, 2005; Pryzby, 2005). Factors such as heavy workload, staffing shortage, frequent exposure to death and dying people and lack of gratitude from patients have all been identified as stressors (Clifford, 1986; Pryzby, 2005). Nurses are human, and they experience stress while caring for patients who are also under stress. Therefore, nurses should equip themselves with practical elements of stress management via CCU courses, stress management workshops or in-house training so that they can recognise their own sources of stress and adopt appropriate strategies to cope with them effectively (Pang & Suen, 2008).

Similar to the results of many other studies, this study also suggests that patients perceived less stress in CCUs than nurses did. Cochran and Ganong (1989) suggest that the patients in the CCU may be physically too ill or too sedated to be aware of, or to remember clearly, what really happened. Or patients may experience the “good patient syndrome”, in which the patient avoids labelling items as stressful because of the fear of being identified as a complainer (Engstrom & Soderberg, 2010).

Physiological stressors such as pain, sleep problems and tubes in the nose or mouth were perceived to be the most important CCU stressors by both patients and nurses. That nurses and patients perceive the same physiological stressors as the most stressful indicates that nurses are sensitive to patients’ needs. This situation indicates that nurses are aware of the CCU’s environmental stressors and of the fact that the CCU environment is a stressful one. Similarly, several studies have also acknowledged such stressors as the most important stressors perceived by patients (Biancofiore et al., 2005; Ciriza et al., 1996; Cochran & Ganong, 1989; Cornock, 1998; Hweidi, 2007; Li & Puntillo, 2006; Novaes et al., 1997; Soehren, 1995).

Moreover it is also apparent that nurses perceived physiological stressors as important stressors for patients (Biancofiore et al., 2005; Novaes et al., 1999). Nurses found psychological stressors to be the most stressful for patients, but patients perceived physical stressors as the most stressful (Cochran & Ganong, 1989; Cornock, 1998; So & Chan, 2004). In this study Table 5.7 shows that, the ranking of stressors differed between patients and nurses. Nurses ranked psychological stressors higher than patients.

Nurses, in an attempt to reduce the negative effects of the stress resulting from the CCU environment, could prioritise the needs of patients along with proper nursing applications during planning for the patient's care, for example, such interventions as providing objective pain assessment and pain management, and decreasing environmental noises and lights during sleep time. These changes could be planned so that patients would experience improved sleep through a modification within the CCU to make some stressors avoidable and other stressors inevitable, for example, the use of catheters is generally unavoidable (Ballard, 1981; Novaes et al., 1997). It could be useful to provide information on how these tubes are essential and to undertake actions that might lead to greater comfort.

It is generally accepted that psychological stress can cause or worsen physical pain. Previous investigations have demonstrated that psychological stress is positively correlated with incidence (Diepenmaat et al., 2006) and intensity of physical pain (Ullrich et al., 2005). It has also been reported that psychological stress increases the sensitivity to pain (Leistad et al., 2006).

Many of these stressors are interrelated. For example, the existence of tubes and immobility can cause pain. Pain can also cause lack of sleep (insomnia) and can contribute to perceptions of stress factors which increases stress levels. For this reason, the necessity of meeting the physiological needs of patients emerges during the planning of nursing care (Li & Puntillo, 2006).

5.10.5 The Effect of Socio-demographic Characteristics on the Level Perception to Stress by Patients and Nurses

The results showed that there is a relationship between the socio-demographic characteristics and the level of perception of stress. The findings indicate a higher stress perception among African patients than Europeans or Asians. It is widely held that how an individual copes with stress impacts on their health status. Researchers suggested that the interaction between coping with stress and various socio-demographic factors may be particularly relevant for Africans and lead to negative health outcomes and behaviours (Fernander & Schumacher, 2008). Semmes (1995) acknowledged that culture is vital in the way a person responds to and copes with both physiological and psychological stress. Although stress may occur in different forms, a unique high stress response from Africans due to race-related stress and years of maladaptive health coping behaviours was perceived (Fernander & Schumacher, 2008). Similarities were found in previewed reports with the same socio-cultural context and they revealed that Africans, for example, will prefer denying or negative coping strategies (like smoking) to the active coping strategies such as dealing directly with a stressor (Shervington, 1994; Utsey et al., 2000).

Social cultural values are an important aspect in an individual's perception of stress. Asians are hypersensitive to what other people think of them; thus they might feel

shame, a negative reaction to the idea that others might think something bad about them (Goddard, 1997). They are also very careful not to say too much, or to hurt anyone else's feelings. The Asian culture places a high priority on maintenance of an individual's dignity and reputation (Goddard, 2001). They may not express their actual feelings about the CCU stressors to maintain their dignity and also to avoid hurting others' feelings (Lam Soh et al., 2008).

For Asians, the failure to explicitly engage support networks may not, in fact, be particularly costly (Taylor et al., 2004; Watson et al., 2008). As noted, the mere perception of having socially supportive networks has long been known to reduce stress, even when the social support network is not explicitly mobilised for dealing with stress (Thoits, 1995). Asians may especially experience their social support from the recognition of being part of a harmonious, interdependent community to which they have responsibilities and obligations. Thus, the yield of social support may not necessarily be less for Asians than is true for Europeans or Africans; the form may simply differ (Watson et al., 2008). On the other hand, there may be some costs of not explicitly engaging one's social support network in times of stress as well. Some of the benefits of utilised social support are quite real, such as tangible aid, information of which one was unaware, and suggestions as to how to cope that one might not think of on one's own. Not seeking social support may deprive a person of these benefits.

In this context, it is useful to note that mental health practitioners have long expressed concern that interventions to provide counselling and other forms of social support to those going through traumatic or stressful events have difficulty attracting Asian participants (Matsuoka et al., 1997; Herrick & Brown, 1998; Futa et

al., 2001). Yet studies of social support have attested to the benefits that such interventions can have for Asians as well as Westerners (Stopes-Roe & Cochrane, 1990; Noh & Avison, 1996; O. Kim, 1999; Park, 2001). The present research is enlightening as to potential cultural factors that may account for Asians' lesser use of these services (Park, 2001).

In a similar vein, research on self-disclosure has demonstrated the positive health and psychological benefits that can occur from talking about one's problems (Silver et al., 1983). For example, talking about an upsetting experience has been found to be beneficial in terms of both physical and mental health (Pennebaker, 1999). It is important to note that these studies were conducted in a Western cultural context that values verbal expression (H. S. Kim & Markus, 2002). It is possible that in a cultural context that does not value expression to the same extent, disclosing one's problems could be associated with negative outcomes. Cultures differ in the value they place on talking (Kim & Markus, 2002). In contrast, in American culture talking is seen as clarifying one's thinking in dealing with problems; in Asian cultures, talking is seen as distraction from thinking (Kim, 2002).

Talking about one's problems in this Asian cultural context could be seen as amplifying problems rather than solving them. Writing about stressful events, however, has also been shown to be a therapeutic tool with mental and physical health benefits (Lepore & Smyth, 2003). This form of expression may have fewer, if any, cultural norms that discourage its use and thus may potentially be helpful as a means of managing stress, regardless of cultural origin.

A key finding of the study is that females appear to experience a higher level of stress than males. These results are not unexpected and are similar to the results of Matud (2004), McDonough and Walters (2001), Osorio et al. (2003), and Pines and Zaidman (2003). Females' high level of stress is related to the multiple roles that females are expected to play: being a wife, mother, employee and housekeeper (Galanakis et al., 2009). Multiple-role demands are often incongruous and contradictory and lead to various forms of strains such as lack of emotional and domestic support and sense of guilt due to high expectations in each role and inadequate social and family support (Iwasaki et al., 2004).

Patients' ages were negatively correlated with the level of stress rated by patients in the current study. One possible explanation may be that older patients might have been socialised to accept a certain degree of discomfort (Holroyd et al., 2008; Pang & Suen, 2008), or they have relatively more experience of illness which may have increased their ability to tolerate environmental stressors (Kim & Mark, 2002). This can render them more compliant with treatment (Holroyd et al., 1998). These results are similar to the research findings that a higher stress tolerance was found among aged patients (Marosti & Dantas, 2006).

Because life-threatening incidents generally happen unexpectedly, the time required to prepare patients for the treatment process and orientate them to the CCU environment is usually inadequate. Therefore, unplanned and emergency CCU hospitalisations, along with an unknown period of stay, might cause more stress than normal for CCU patients. CCU nurses should be supplied with information such as the reason for CCU admission, the CCU environment, treatment and interventions at appropriate times. In similar studies, patients admitted into the CCU

as emergency cases had a higher overall stress score compared with those admitted as planned admissions (Pang & Suen, 2008, 2009).

Furthermore, a CCU stay may be perceived to be normal after cardiac collapse. Also, as long as there are no medical complications, the time period for hospitalisation in the CCU is predictable. However, the stays of those patients who are hospitalised in the CCU for medical conditions such as chronic diseases are considered to be stressful as the period of stay may be unpredictable. In the current study, most of the medical cases admitted to CCU were hospitalised as either unplanned or emergency admissions (Pang & Suen, 2008, 2009).

Patients who have a higher level of education may be more optimistic and have more resources to cope with stressful situations than people with a lower level of education (Finkelstein et al., 2007). However, the situation is different for nurses. Nurses with higher qualifications are more likely to gain promotion (Park et al., 2007) and therefore take on increasing levels of responsibility and management duties. It could be this responsibility rather than the qualification that causes increased stress.

My findings demonstrate that there is a negative correlation between the number of years of nursing experience and stress from home-work conflict and caring for patients. The higher the number of years of experience, the lower the level of perceived stress from these constructs. However, when CCU nursing experience was controlled, these correlations were no longer statistically significant. This suggests that CCU experience, rather than general nursing experience, is of importance in the CCU context. It may be that nurses learn to deal with the external

stressors over a period of time in the CCU and familiarity with the CCU environment moderates the perception of stress. It is likely that as CCU nurses become more experienced they benefit from a decentralised management style which results in higher levels of autonomy. Thus, they are able to develop an internal locus of control over their working environment and hence reduce their perceived workplace stress (Nolan et al., 1995; Volk & Lucas, 1991).

In the current study nurses with medical ICU experience perceived the CCU as being more stressful for patients than for nurses with surgical ICU experience. In other studies, there was no comparison of stress scores that indicate a difference between medical and surgical ICU nurses. The reason why nurses working in medical ICUs perceived that patients experience more stress than the nurses working in surgical ICUs may be because medical ICU patients are generally treated for chronic conditions and stay in the ICU longer. However, further investigations could be useful. Patients are admitted to a surgical ICU for surgery rather than emergency care (Pang & Suen, 2008; 2009).

5.11 Conclusion

The CCU nurses should have the ability to explore factors that may contribute to patients' experience in the CCU; such factors may be beyond a patient's conscious awareness. For example pain is not what the patient says it is, because at times, other issues may present themselves which are disguised as pain. I believe that the use of the non-representational view of pain does allow for further pain exploration and consideration for other possibilities of the patient's pain. What we are ultimately concerned with treating is the patient's definition of their pain experience, whether that experience is psychological or physiological in nature.

Although I agree with the assertion that the nurses' judgement and clinical expertise play an important role in uncovering factors that may contribute to the patient's perception and labelling of stress, there were discrepancies in what the patient says and what is physiologically true. It is therefore unreasonable to discount or devalue the patient's perception of their experience. If patients choose to see various aspects of their being as more significant than others during times of health challenges, why is it important for the nurse to impose their views of reality of the situation on the patient?

Nursing assessment often reveals many aspects the patient may not be able to articulate or may not even be aware of. Assessment is a trust-building exercise between the nurse and the patient, and a working relationship where assessment data are shared and analysed to find the "true" meaning based on the patient's perceptions and the nurse's judgement and experience and the practice of nursing. Just as it would be irresponsible and unethical for the nurse to judiciously medicate the patient based only on what they say, it would be unethical to medicate them

based only on clinical judgement without taking into consideration their values and perceptions of the experience.

The majority of the patients in the CCU experienced problems sleeping, having pain, being immobile, being attached to devices, and being anxious about the consequences of the disease. The assessment used by nursing staff of frequent attendance on the patient's bedside or awakening the patient did not have a high negative impact on patients unlike the noise created by them or by light. Patients' experiences and perceptions of stress vary and are affected by their socio-demographic characteristics. It has been found to be higher among females and aged patients. CCU nurses, when planning the care of their patients, should give attention to gender and age needs.

Patients' perceptions of CCU environment stressors were affected by the method of admission to CCU. Patients that were transferred from the emergency department showed a higher perception of stress than patients transferred from the hospital floor or from other hospitals. Therefore nurses, when caring for patients, should consider patients' sampling characteristics to maximise the health care delivery services and to minimise the negative effect of patients' CCU experience.

The current findings also highlight the importance of cultures reflected by ethnicity on perceived stress levels among the CCU population; hence, culturally specific interventions for patients can be designed. Strategies suggested may help relieve the stress and anxiety of patients and establish a more humane CCU environment. Nurses should respect and understand the patients' cultures and help their patients to adopt their cultural values to cope with stressful events. In addition, nurses should

recognise their own sources of stress so that they can adopt effective coping strategies to overcome the stress arising from their working environment.

The results of this study suggest that nurses have a higher stress perception in many situations than their patients in a CCU setting. These findings have strong implications for clinical practice, especially in an acute care setting. Appropriate strategies should be implemented to alleviate the stressful feelings perceived by both groups. Nurses must endeavour to cope with the situations patients listed as most stressful.

CHAPTER 6: RESEARCH DISCUSSION

6.1 Introduction

This chapter presents the final discussion for the entire research. It accompanies the results presented in Chapters 4 and 5.

6.2 Discussion

Nurses perceived that patient stressors were higher compared to the estimations and perceptions of patients. This may be due to the fact that nurses have professional knowledge and are aware of the significance/severity of cardiac disease and cardiac disease processes (Manojlovich et al., 2009). Nurses may also have reported assessments of higher patient stress to avoid being seen as insensitive (Yava et al., 2010). Pang and Suen (2008) have indicated that factors based on the CCU environment, such as heavy workload, staffing shortages, frequent exposure to death and dying people, and stress in caring for patients who are under stress could have an effect on nurses' perceptions of stress. Yava et al. (2010) suggested that patients being nursed in the CCU may be physically too ill or too sedated to be aware of, or to remember clearly, what really happened to them. Alternatively, patients may experience the "good patient syndrome", in which they avoid labelling items as stressful because of the fear of being labelled as a complainer (Pang & Suen, 2008).

Table 5.3 illustrates that patients perceived the items "being in pain", "not being able to sleep", "being stuck with needles", "only seeing family and friends for a few minutes each day", "being restricted by tubes and lines", "having tubes in your nose or mouth", "having the lights on constantly", "fear of death", and "nurses and doctors talk to loudly" to be the top 10 coronary care unit (CCU) stressors. The results concur with the findings reported by Cochran and Ganong (1989), Cornock (1998), Novaes et al. (1997), So and Chan (2004), and Pang and Suen (2008). In the current study, patients' narratives reflected the interaction of the patients ranked items with each other. For example patients ranked the item "being in pain" as the most important stressor. This was perceived by 58% of patients. Patient narratives rationalised the pain they had in the CCU as due to the nurses' poor assessment and misunderstanding of their pain. Carr (1997) reported similar findings and stated that

there is limited research related to clinical decision-making in relation to pain management. One explanation, however, may be the apparent lack of knowledge amongst nurses of the actions of analgesics and sedatives (Morgan, 1992; Blenkarn et al., 2002).

Although patients attribute the pain they experience to the physical causes (e.g. tubes and lines in hands or mouth), others attributed the pain they experience to psychological causes (e.g. separation from family). This could explain the top ranking of patient stressors. Effective pain management can only be achieved with accurate and objective pain assessment (Blenkarn et al., 2002) and the provision of the best possible analgesia for the patient (Novaes et al., 1999). Adequate pain control was perceived as necessary to provide comfort, promote rest and sleep and improve compliance with nursing and medical interventions (Wong & Arthur, 2000). The effectiveness of using non-pharmacological methods like the use of headset music or nurses applying massage to patients for pain management and or stress relief can be significantly beneficial in relieving patients' pain (Pang & Suen, 2008).

Patients under the age of 45 frequently reported pain to be related to psychological consequences like light, noise, separation from the family and financial worries. This finding concurs with So and Chan (2004), Pang and Suen (2008) and Yava et al. (2010). In contrast 12 patients above the age of 45 years were satisfied with pain management in the CCU as described by patient MAF:

“I like the people in this place, they gave me a good tablet at night which relieved my back pain and made me sleep till the next morning.”

The presence of pain causes insomnia (Campbell & Happ, 2010). The need for sleep was perceived to be one of the most important needs reported by patients. It was ranked as the second most important environmental stressor (Table 5.3). Patients related their lack of sleep due to the noise from nursing and medical staff or the surrounding equipment. The evidence suggests that sleep disruption is most likely due to a combination of internal and external factors which impact differently across patients according to individual particular circumstance (Drouot et al., 2008). Individual patient illness and prior experiences, together with fluctuating severity of illness can impact on the potential to achieve effective sleep. Particular factors identified as those that cause sleep disturbance included pain, anxiety, and nursing and medical procedures (Honkus, 2003; Reishtein, 2005; de Jong et al., 2005; Drouot et al., 2008). Nurses' assessment of patients' sleep patterns was regularly based on their own interpretation of the patients' sleep requirements, occasionally supplemented by asking the patient (Richardson et al., 2007).

Richardson et al. (2007) highlighted how nurses' sole judgement of patients' sleep is not a reliable method in clinical practice. Using sleep assessment tools in critical care nursing requires sophisticated nursing judgement. Through the selection and adaptation of sleep assessment tools, the critical care nurse and Advanced Practitioner Nurse (APN) can monitor, provide interventions, and measure improvements in patients' sleep patterns (Richardson et al., 2007). Coronary care nurses need an accessible, reliable, and valid tool to use with adults that provide a complete assessment of sleep pattern disturbance, a frequent but often missed diagnosis for coronary care patients (Richardson, 1997). Richardson (1997) tested three different assessment tools. He reported that patients with sleep deprivation

suffered from a range of symptoms which included irritability and psychosis. The results concur with Luby et al., 1960 and Webb and Agnew, 1965.

Items in the ESQ like “having tubes in your nose or mouth”, “being stuck with needles”, “being restricted by tubes and lines”, and “not being able to move your hands and arms because of an intravenous (IV) line” all reflect the restrictions of movement ranked within the top 10 CCU stressors by patients and nurses (Tables 5.3 and 5.4). Similarities were found in published reports (Hweidi, 2005; Biancofiore et al., 2005; Pang & Suen, 2008, Yava et al., 2010). Biancofiore et al. (2005) and Hweidi (2007) stated that nurses perceived physiological stressors to be the most stressful for patients; their perception is based on the nursing intervention. In an attempt to reduce the negative effect from the stress resulting from the CCU environment, nurses could prioritise the needs of patients along with proper nursing applications during the planning of the patients’ care (Yava et al., 2010). Though modification of the structure or managing strategies within the CCU may make some stressors avoidable, other stressors are inevitable. For example, the use of both urine and cardiac catheter is generally unavoidable (Ballard, 1981; Novaes et al., 1997). It could be useful to provide information on why these tubes are essential and to undertake actions that might lead to greater comfort (Yava et al., 2010).

Some items in the ESQ were similar in content like “having your blood pressure taken often”, “having the nurse constantly doing things around your bed”, “frequent physical examination” and “being cared by unfamiliar doctors” (Table 5.5). Nurses scored these items with a higher priority than patients. Nurses mainly perceived the items related to their own interventions and environmental factors (Cochran & Ganong, 1989; Novaes et al., 1997; Pang & Suen, 2008). As patients felt that those

items were not stressful but compulsory it made them feel that they were being well cared for (Pang & Suen, 2008). These data concur with Cochran and Ganong (1989), Novaes et al. (1997), Pang and Suen (2008), and So and Chan (2004). The findings indicate that nurses also perceive these items as the least stressful for patients. It could be recommended that nurses should provide necessary information to patients when performing nursing procedures.

Patients generally found psychological stressors such as “not knowing what time it is”, “not knowing where you are” and “not knowing what day it is” less stressful, probably because these are mainly related to time and location orientation. This finding may have occurred because patients were well informed about the time and location of the care they were given, and were comfortable with both. An alternative view may be that patients did not perceive a lack of knowledge about time and date as stressful because they were simply too ill to care (Yava et al., 2010).

The other less important factors identified by patients were “feeling pressured to consent to treatments” and “fear of AIDS”. These two items were recommended to be contained in the intensive care unit environmental stressor scale (ICUESS) by Cochran and Ganong’s (1989) study. In later studies, these items were also reported to be less stressful (Cornock, 1998). Patients also found the item “feeling pressured to consent to treatments” to be less stressful; this may be due to their full acceptance of treatment by medical staff. Recently, Hweidi (2005), when modifying the item “fear of AIDS” to “fear of hospital-transmitted diseases”, found the item to be a major stressor. Coronary care units are postulated to be high-risk areas for the spread of nosocomial infections because of the crowding of patients with high levels of disease acuity, the likelihood of person-to-person transmission of microorganisms

and the presence of more complex patients who require prolonged hospitalisation (Pang & Suen, 2008). Thus, the item “fear of hospital-transmitted diseases” may be added to the ESQ for further research.

It is known that sleep deprivation is caused by anxiety (Honkus, 2003). The complexity of feelings associated with anxiety includes feelings of uncertainty, apprehension and worry (Fraizer et al., 2002). Anxiety was reported to be the most important feeling perceived by patients and nurses in the current study. Although patients and nurses related patients’ anxiety to fears of disease, uncertainty and concerns about the environment, this highlights a lack of nurse intervention to reduce levels of revealed anxiety. The conclusions drawn from this study indicate that CCU nurses rely more on their ability to measure physiological cardiac variables that cause anxiety or to observe the overt behaviour than a patient’s own report of subjective phenomenon (Fraizer et al., 2002).

There is no doubt that the disease and its associated problems lead to anxiety but it is quite possible that individuals with inherent anxiety are more vulnerable to this problem. If so, this group needs to be identified well in advance and prepared not only medically but also educationally and psychologically (Kohli & Aggarwal, 2011). Anxiety is certainly controlled by the locus of control. The locus of control refers to a centre of perceived responsibility for one’s behaviour. Individuals with an internal locus of control believe that they can control events related to their life, whereas those with an external locus of control tend to believe that real power resides in forces outside themselves that determine their life (Kohli & Aggarwal, 2011). Appropriate coping strategies are required to overcome the anxiety. Coping strategy is a behaviour that helps one to function better in a given situation. Coping

is the process of managing taxing circumstances, expanding efforts to solve personal and interpersonal problems, and seeking to master, minimise, reduce, or tolerate stress or conflict (Sousa, 2008; Dunk et al., 2007). The less effective the coping responses, the more chance of having a higher level of anxiety. Coping is especially important in cardiac patients as it is extremely difficult for patients to get used to support machines and the associated therapy (Logan et al., 2006). It is important to have positive cognitions and adopt deliberate behavioural efforts so as to enable a good quality of life for patients (Kohli & Aggarwal, 2011).

The assessment of patient perceptions, including those of fear and anxiety, may help to identify patients at risk of developing psychological stress (Samuelson et al., 2007). In addition, it could be helpful for nurses to encourage patients to express their feelings of anxiety and to consider this fear as an important source of stress. Physicians should be aware of psychological stress in patients with physical pain, especially for pain that is idiopathic. Pain as various aspects of psychological stress may determine the incidence, site and intensity of physical pain as presented in this study (Hwang et al., 2008). Concurrently, there is a need for nurses to be better equipped in communication and counselling, and patient education skills.

Fear of sudden death is an important stressor in the health care of cardiac patients. The item “fear of death” was ranked as the highest environmental stressor by nurses and as the ninth highest by patients. In contrast, fear of death was ranked fifth by patients and fourth by nurses in Cornock’s (1998) and Pang and Suen’s (2008) studies. It is not surprising that fear of death is an important stressor for patients and nurses. The medical conditions of CCU patients might be more severe than surgical service patients because of the fear of death itself (Pronovost et al., 2002). Coronary care nurses may perceive more stress than other nurses related to death and dying as

this rating of death is actually related to their own fears of losing the patient during life-saving procedures (Foxall et al., 1990). Nurses also felt grief as well as unease and inadequacy in dealing with dying patients (Pang & Suen, 2008). Moreover, patients in the CCU may witness the death of other patients; in turn, this could increase the individual level of anxiety for such patients (Wong & Arthur, 2000).

The presence of family is a positive factor for the patient, giving comfort and reducing the stress level (Giannini, 2007; Eriksson & Bergbom, 2007; Roland & Russell, 2001). This was perceived clearly in the current study by 54 patients (90%). The effect of visiting on patients' psychology was described thus by patients ARM and SAF:

“My family clean my body, tidy my bed, say a few comforting words. Everybody says that my son comes every night, no matter how late it is; this makes me feel comfortable.”

An open visiting policy, defined as a policy that imposes no restrictions on visiting hours, duration of visits and/or number of visitors, seems to fit better with patient and family needs (Berwick & Kotagal, 2004; Buchardi, 2002; Marco et al., 2006; Verhaeghe et al., 2005; Spreen & Schuurmans, 2011). The clinical practice guidelines about family care also recommend an unrestricted visiting policy in adult CCUs (Davidson et al., 2007).

One of the interesting findings of the current study is that although nurses perceived that patients need the support of family and friends as it plays an important role in a patient's recovery, they ranked the item “only seeing family and friends for a few minutes each day” as the 35th highest stressor in the CCU (Table 5.5). Nurses

perceived that patients' needs for visits from family and friends actually reflect their own needs for the patient's family to enhance communication, reinforce education and to encourage the patient to comply with medical and nursing interventions (Marco et al., 2006). This was stated in this study by Nurse N2:

“When communication with the patient is not good, for example, with a patient who speaks a local slang that only his children can understand, we can ask the patient's children to talk to the patient, which prevents miscommunication... this can save time...”

Although the CCU has a relatively short history, dating back less than 40 years, it has made dramatic progress during its lifetime, with advances both in the clinical understanding of events and in the development of diagnostic and therapeutic tools (Giannini, 2007). Through this evolution, however, one element has remained constant and that is the “closed” structure of the CCU. The use of the term “closed CCU” refers to a CCU with restricted access, either limiting visits or no visits at all (Giannini, 2007). Treatment in coronary care units (CCU) is not only very stressful for the patient but also for the family as well.

Meeting the needs of a patient's family is an essential part of the responsibilities of CCU physicians and nurses (Azoulay et al., 2001; Verhaeghe et al., 2005). By restricting visiting schedules for family and friends, this increases the level of anxiety and stress especially with the presence of fear of death (Spren & Schuurmans, 2011). The item “only seeing family and friends for a few minutes each day”, which was ranked as the sixth highest stressor in a CCU by patients, and thus is extremely stressful (identified by 42% of the patients (Table 5.3)).

Nurses' perceptions of patients' visiting preferences in this study are consistent with the literature as nurses favour restricted visiting hours because excessive visits are presumed to be detrimental to patients, for example the patient might not get sufficient rest due to the organisation of care. Too many family visits can interrupt the delivery of nursing care delivery and have a negative effect on the functioning of the unit (Berti et al., 2007; Berwick & Kotagal, 2004). One nurse expressed that she doesn't like the patient's family to watch her while she is performing nursing procedures. Nursing teams in CCUs have deeply held convictions that oppose the opening of the units and the presence of the patients' families and friends (Giannini, 2007). The reason behind these conceptions included an increased risk of hospital-acquired infection, interference with a patient's treatment, increased CCU team workload which increased constraints on the efficiency of the CCU. In addition, perceived stress increased for patients and their families due to violation of the patient's privacy (Berwick & Kotagal, 2004; Giannini, 2007).

Privacy was an issue for patients and nursing staff. The item "having no privacy" was prioritised by both patients and nurses (Table 5.5). Although it was ranked as the 11th highest ESQ stressor by patients and the seventieth by nurses, both nurses and patients viewed these stressors in different ways. For example, the main reason for the lack of privacy for patients was the structure of the CCU unit, while for nurses it was associated with visits from family and friends. Thirty patients (50%) stressed the need for a single private room in the CCU, as, in this way, they can protect their privacy and that of other patients too.

A recent extensive review of the literature (Ulrich et al., 2004) on evidence-based design in acute care settings demonstrated that patient-centred and psychologically

supportive acute care environments facilitate positive patient outcomes, such as increased patient privacy and patient control over personal information. It also focuses on opportunities to rest and discuss patients' needs with family members and friends (Chaudhary et al., 2005).

The efficacy of the single room acute settings design versus an open design has been highlighted recently as an important issue in patient care. Chaudhary et al. (2005) indicated that respondents rated many of the environmental characteristics of single-patient rooms as helpful. These included the layout of the room (47%), the availability of space in the room (49%), the arrangement of the furniture (47%), privacy (89%), and space for family members (51%). Double-occupancy rooms were thought to be somewhat helpful in terms of being within walking distance from the nursing station (41%) and the visibility of patients for monitoring purposes (40%) (Chaudhary et al., 2005). Also the location of the sink, bathroom, door, and window in single-occupancy rooms was rated as helpful by a large majority of respondents (63%, 66%, 67% and 73% respectively) (Chaudhary et al., 2005). Similarly, in double-occupancy rooms, the location of the sink, door, and window was considered somewhat helpful (34%, 41% and 40% respectively) (Chaudhary et al., 2005). Chaudhary's results also demonstrate that single rooms can reduce the effect of other environmental stressors such as lighting, temperature control, and noise levels. These features are somewhat problematic in multiple-occupancy rooms. The data on environmental features in single-occupancy and double-occupancy rooms demonstrate that single rooms have more helpful features than multiple-occupancy rooms (Chaudhary et al., 2006).

Single-patient rooms have become the industry standard in the construction of new acute care facilities in the United Kingdom for several reasons (Ulrich et al., 2004). Health care design professionals, planners, and administrators argue that private patient rooms reduce the possibility of infection, reduce patient stress levels, and facilitate nurses' and health care workers' ability to do their jobs efficiently. They also provide adequate space for family members to participate in the healing process of the patients, and provide more privacy for the delivery of bedside treatments and permit sensitive discussions with health care personnel (Bobrow & Thomas, 2000; Gallant & Lanning, 2001; Hill-Rom, 2002; Ulrich, 2003, 2004).

Current findings revealed that although patients, when referring to the care they received, were referring to nurses, 25 patients (41.7%) commented that staff should provide sufficient time to communicate with patients (Table 5.9). Patients discussed their fears and concerns with family and friends and used this as a form of support. Recently Alasad and Ahmad (2004) reported that the family acts as a good source of information for the patient. Niiyama et al. (2008) argued that although using family and friends could be a good form of social support, it was revealed that the recovery process could be rendered and anxiety levels increased when patients discuss medical issues with non-medical professional personnel.

Many nurses were aware that patients suffered from uncertainty and fear of the suddenness of, and the consequences of, cardiac disease (Table 4.1). Therefore all CCU patients should expect good communication to take place during the assessment phase (Alasad & Ahmad, 2004). Inadequate nurse-patient communication results in an increased level of stress and anxiety (Weimann & Giles, 1988; Baker & Melby, 1999). Verbal communication, which provides

explanations and orientation, can help patients preserve their self-esteem, which, in turn, can enhance their well-being and optimism (Dyer, 1995).

Ten nurses (28.6%) commented that each CCU patient should have a discharge plan (Table 5.10). Discharge planning is an important means of ensuring the patient's needs are met before they are discharged from the CCU (Chaboyer et al., 2002). It has been viewed as the "critical link between the treatment received by the patient in the CCU and the post-discharge care provided in the ward" (Department of Human Services, Victoria, Australia 1998, p. 2). Discharge planning encompasses a number of steps, and is generally thought to include patient assessment, development of a discharge plan, and provision of services including education, referral, evaluation or follow-up (Mamon et al., 1992).

The actual content of discharge planning is dependent on the individual patient's personal and social life and on the nature of their clinical condition (Chaboyer et al., 2002). According to Lowenstein and Hoff (1994), to participate in discharge planning effectively nurses must know the process, have access to the resources and time, and be interested in discharge planning.

Findings highlighted that even though nurses showed an interest in using discharge planning, existing staff shortages reduced the time available to follow up patients to the ward. These findings concur with the research findings of Watts (2006) who concluded that workload issues, unplanned discharge and communication processes were identified by critical care nurses as key factors that influenced the development and implementation of the patient's discharge plan.

The need for discharge planning should be taken in consideration by CCU nurses and their organisations. In the current study, 16 patients (26.7%) claimed that they expressed some anxiety when being transferred from the CCU to the general ward. They experienced feelings of being neglected and lack of care compared to the attention and care they received in the CCU. This may be due to the fact that the sites used in the study comprised clinical areas in hospitals that have fewer nursing staff attending to patients' needs (Langen et al., 2005). Recently Krupat et al. (2000), Jenkinson et al. (2002) and Langen et al. (2005) acknowledged that cardiac patients transferred to clinical areas expressed a high degree of satisfaction with the care provided by ward staff. Nurses were considered almost as important as the close family in giving support during the hospital stay.

Cultural beliefs play an effective role when coping with stress (Morales et al., 2003). Woods et al. (1999) examined the relationship between religiosity and coping. The results revealed two categories of religiosity: religious coping (placing trust in God, seeking comfort in religion) and religious behaviour (attending church, religious rituals). Religious coping was associated with lower anxiety symptoms (Woods et al., 1999). Furthermore, Greenwood et al. (2000) reported that in terms of in-patient views on local mental health services, the most common strategies used to help Asian patients cope with the effects of illness included prayer and religion as well as seeking help from religious healers.

Religion can be conceptualised as a form of culture because it is a unified system of beliefs and practices that vary across different religious traditions; religion uniquely focuses on relationships with the divine and faith (Cohen, 2009). Throughout history, there have been many instances of religion being shaped by the cultural

context. For example, qualitative research in religious studies has shown that mainstream American values, such as independence and personal choice, have influenced the way Christianity is practised in the United States today (Wolfe, 2005). This is an instance of one religion, in this case Christianity, taking on the meanings of a particular culture and incorporates the needs and values of that group. However, the cultural shaping of religion has yet to be demonstrated empirically in psychology (Sasaki & Kim, 2010).

Another explanation of how patients cope is related to their locus of control. It was observed that the patients were significantly more involved in externalism in comparison to the healthy control groups. Two reasons explain this. First, as they are totally dependent upon family members, doctors, medicines, dialysis staff, and machines, a feeling of “loss of freedom” emerged (Hagren et al., 2001). Second, religious and spiritual coping methods are the most common ways of coping with all kinds of problems whether they are disease related or not. Burns (2004) found that turning to God was the most frequently identified strategy for physical and psychosocial adaptation among critically ill patients.

The research findings in this study revealed that the level of perception to stress varied according to participants’ socio-demographic characteristics. From an ethnicity viewpoint, African patients showed more stress levels than Europeans and Asians. Fernander and Schumacher (2008) point out that culture is vital in the way a person responds to and copes with psychological stress. Although stress may occur in different forms, a unique and relatively common stressor that Africans face is that of race-related socio-cultural stress (i.e. discrimination and acculturative processes) (Jackson et al., 1996). The negative health effects of stress have been widely

documented and the impact of race-related stress is associated with a number of negative psychological and physiological health outcomes (Reid & Harrell, 2002; Jackson et al., 1996).

Table 5.8 showed that Asian patients perceived less stress. Data from the analysis of narratives showed that most of Asian patients relied on their cultural and religious beliefs to cope with stress more than their counterparts. The effect of ethnicity on perception of stress and anxiety reveals that in Asian cultures, with their greater traditional and religious heritage, they can provide better means and resources for finding meaning and making sense of distressing events (Ahearn et al., 1999). For Asians, trying to preserve their culture and religion is traditionally a dominant force in their lives (Hussain & Cochran, 2010).

The characterisations of Asian cultures as interdependent and Western cultures as independent might seem to suggest that Asians would be more likely to enlist the help of their social support network in coping with stress, because the self is viewed as fundamentally connected to others (Markus & Kitayama, 1991; Triandis, 1989). Similarly, there are compelling reasons to believe that Europeans would be less likely to call on their support networks in times of stress, because in independent cultures, the self is seen as fundamentally separate from others (Markus & Kitayama, 1991). Hence, those from independent cultures might perceive that they have a personal responsibility to solve problems individually and not through the assistance of others. In contrast to these seemingly self-evident predictions, the present research revealed exactly the opposite pattern (Sasaki & Kim, 2010).

This counterintuitive cultural pattern may be explained in terms of how individuals from different cultures value the goals of the self in relation to the goals of relationships. In individual cultural contexts, relationships may be seen as a means for promoting individual goals, and as such, one may recruit explicit help or aid from those in one's social network in order to achieve one's personal goals. In collectivist cultural contexts, individual goals may be seen as a means for promoting relationships. Pursuing the goals of the self may risk straining relationships if one calls on his or her social support network for aid (Markus et al., 1997; Sasaki & Kim, 2010). Thus, a person from an interdependent country may feel that he or she has less to gain personally than he or she can lose socially by calling on others for help. That is, if pursuing the goals of relationships is primary, then a person may prefer not to burden the social network and to solve problems individually instead. Thus, cultural differences in the relative weight of the self's goals and goals with respect to relationships may produce cultural differences in whether a person copes with stressors by enlisting the help of the social support network (Sasaki & Kim, 2010).

Cultural patterns may have respective benefits and liabilities. Extracting explicit support, as Europeans commonly do, may yield emotional solace and concrete information relevant to coping, but it can also be associated with costs. Explicitly drawing on the help of others may reduce self-esteem and/or it may lead to emotional distress over taxing the resources of others (Bolger et al., 2000). Research has suggested that social support that remains unused can be more beneficial than social support that is actually recruited for coping with stress (Wethington & Kessler, 1986).

A cultural psychological perspective may offer some important insights into the understanding of the influence of religion on controlling of social affiliation may vary systematically by culture. For instance, people typically hold a more independent view of the self in more individualistic cultures, such as in Europe. This view posits that the self is unique and separate from social surroundings (Markus & Kitayama, 1991) and places a strong emphasis on personal choice (Iyengar & Lepper, 1999; Savani, Markus & Conner, 2008) and self-focused agency or control (Markus & Kitayama, 2003). Alternatively, people commonly hold a more interdependent view of the self in more collectivistic cultures, such as in Asia. According to this view, the self is inherently connected to others, and value is placed on obligations and harmony in social relationships more than on personal agency (Miller et al., 1990; Markus & Kitayama, 1991). Consistent with these cultural patterns, control may be more relevant for those with independent than those with interdependent self-construal, whereas social affiliation may be emphasised more than control for people with more interdependent self-construal.

Although Morling et al. (2002) illustrate that Asian culture emphasis on secondary control more than primary control and vice versa for Europeans or Africans. Alternative views indicate that in certain contexts, Asians may prefer coping styles that are centred on social relationships, whereas Europeans may prefer secondary control over social coping. For example, in a study of pregnant women, cultural differences emerged such that Europeans tend to use more individual-focused coping strategies, such as secondary control or acceptance (e.g. coming to terms with weight gain resulting from pregnancy), as a way to cope with the stressors associated with pregnancy. On the other hand, Japanese women tend to use social coping strategies, or taking comfort in the influence of close others, more than

individual-focused coping strategies, including secondary control (Morling et al., 2003). It seems that control, whether by asserting personal influence or accepting the situation, may not be as central a concern for people from more collectivistic cultures. Rather, maintaining positive relationships with close others may be a greater priority (Kohli et al., 2011).

In chronic diseases, patients generally show lesser approach coping and more avoidance coping (Gillanders et al., 2008). Gillanders et al. (2008) stated that African people on maintenance haemodialysis use the avoidance coping responses rather than positive reappraisal. This infers that patients other than Africans made more cognitive attempts to look at the problem in a positive way and could reframe their problem for better adjustment. The greater use of reappraisal was found to be significantly associated with lower levels of anxiety (Gillanders et al., 2008). Similarly, seeking guidance and support and problem solving were higher in patients, implying that patients made more behavioural attempts to seek information, guidance, or support as well as prompt action to deal directly with the problem. Yeh and Chu (2007) also found more social support seeking behaviour among such patients. Even though most patients had predominantly an external locus of control (dependency on others) their coping responses were good.

Control may be one pathway through which people benefit from religion (Krause, 1992; George et al., 2002; Spilka et al., 2003). Although religions may involve varying amounts of control across situations, psychologists have theorised that religions emphasise mostly a control which endorses the alignment of the self to a god or spiritual force and acceptance of circumstances as core principles (Weisz et al., 1984; Spilka et al., 2003). In addition, empirical research has shown that

religious coping strategies predict positive psychological outcomes, with the most beneficial form being “collaborative” religious coping, or trying to gain a sense of control by believing that one shares responsibilities of solving a problem with God (Pargament et al., 1999). A recent review also concluded that religion promotes greater self-control, or the ability to override an initial inclination in order to achieve another desired goal (McCullough & Willoughby, 2009). It seems that, overall, religion may have the beneficial effect of increasing control, allowing people to accept the situation and adjust the self by exerting greater control over their own behaviours.

Other likely reasons for variance in findings include cultural differences and different data collection sites. Findings of Madhok (1992) in Middlesbrough UK hospitals on patients with “Asian” ethnicity and “non-Asian” (Caucasian, African, or European) ethnicity identified that Asian patients seldom complained about the amount of information received (Madhok et al., 1992). Interestingly, older Hong Kong Chinese residents in residential care homes were more likely to accept harmony and meet the collective needs of the majority rather than focus on their individual needs (Low et al., 2007). This may be due to the tenets of Chinese culture and beliefs where patients usually do not openly express their complaints about the quality of care (Chen, 2001). Hence, culture can play an important part in influencing how people respond to care. Despite this, Kanai-Pak et al. (2008) determined how nurse burnout, job dissatisfaction and quality of care were associated with work environment factors. Data from 19 Japanese hospitals showed that about 59% nurses ranked the quality of care on their unit as fair or poor. Thus, future research should include a variety of ethnicities and more NHS Trusts.

The age of patients negatively correlated with the level of stress and positively with the use of cultural beliefs. Possible explanations for this finding may be related to the fact that older patients might have been socialised to accept a degree of discomfort (Holroyd et al., 2008; Pang & Suen, 2008), or may have relatively more experience of illness which could have increased their threshold in tolerating environmental stressors (Kim & Mark, 2002). This can make them more compliant with treatment (Holroyd et al., 1998; Marosti & Dantas, 2006). Other explanations that can be retrieved from participants' narratives are practising rituals and relying on cultural beliefs. Rituals are part of the daily activities of many Asians, especially the older generation and these rituals are perceived as purifiers of the mind that enhance the good development of karmas (Hussain & Bhushan, 2010). Engagement in such activities give them strength, happiness and peace of mind (Hussain & Bhushan, 2010). It has been established that age, social-economic status and educational background have a negative relationship with stress; as people get older, they experience less stress, and the lower the educational and socio-economic levels, the higher the levels of stress experienced (Finkelstein, Kubzansky, Capitman, & Goodman, 2007; Gallo & Matthews, 2003).

Older patients are generally more satisfied with the quality of care and are more likely to give lower ratings of stress than younger patients (Muntlin et al., 2006). Callahan et al. (2000) also found an interesting result: because older patients need more return outpatient visits with their primary care physicians, they reported higher levels of satisfaction than younger patients. In addition, older patients may suffer from chronic conditions that require more medical attention than younger people. The Taiwan Bureau of Health Promotion, Department of Health statistics report in 2006 indicated that older individuals between 65 and 75 years, and those greater

than 75 years, have an average of 21.6 and 27.5 chronic diseases respectively. Thus, older patients may have to return for care at a later date and may thus give higher scores to please nurses. Unfortunately, as our data included no information about number of patients with chronic disease, further research is needed to provide more sufficient data before drawing conclusions on this aspect.

Although there is increasing consensus that the rate of exposure to stressors tends to decline with age (Zautra et al., 1991; Almeida & Horn, 2004; Stawski et al., 2008; Diehl et al., 2010), findings regarding the role of age in terms of reactivity to stress have been mixed. Mroczek and Almeida (2004) found a stronger association between stress and negative effect for older adults compared with younger adults. This implies that older adults may be more vulnerable to the negative effects of stress. Alternatively, older individuals have shown less of an increase in the negative effect of stress compared to their younger counterparts (Uchino et al., 2006). In contrast, Stawski et al. (2008) have shown that emotional reactivity to daily stressors was consistent regardless of age.

Results indicate that CCU patients' perceptions of stress were influenced by gender. Female patients generally report a higher perception of stress than men. Evidence on the effect of gender on perception of stress by Bellman et al. (2003), Falcoz et al. (2006), Rueda and García (2006), and Bruscia et al. (2008) suggested that gender moderates the health implications of emotions in cardiac prognosis. Substantial research shows that women have higher rates of anxiety and stress compared with men (Kessler et al., 1994). There are indications that the experience of cardiac illness could trigger more mental health problems in women than in men (Holahan et al., 2006; Rueda, & Garcia, 2006).

A considerable body of evidence suggests that women encounter stressors more frequently than men (Crandall et al., 1992; Davila et al., 1997; Almeida & Kessler, 1998). Gove (1984) argues that higher levels of stress among women result from gender role expectations of greater supportiveness and empathy. Differential stressful experiences by gender are possibly a function of event type, with men experiencing more legal and work-related events and women reporting more interpersonal events (Almeida & Kessler, 1998; Kendler et al., 2001).

Even though gender represents one of the most thoroughly examined variables in relation to stress, some studies report either no gender differences (Deaux, 1984; Doty & Spokane, 1985; Osipow & Davis, 1988; Martocchio & O'Leary, 1989; Osipow & Roxburgh 1996; Thompson & Kirk-Brown & Brown, 2001), while others report significant gender differences. Among these studies, some suggest that men experience higher levels of stress (Cooper, Rout & Faragher, 1989; Rosen et al., 1999), while most identify women as experiencing higher levels of stress (Roxburgh, 1996; Lengua & Stormshak, 2000; Ritter et al., 2000; McDonough & Walters, 2001; Osorio et al., 2003; Pines & Zaidman, 2003; Matud, 2004; Hall et al., 2006; Tytherleigh et al., 2007). Researchers who have identified higher stress levels for women (Roxburgh, 1996; Tytherleigh et al., 2007) have suggested that women report higher levels of stress either because they are less effective in coping with it (McDonough & Walters, 2001; Roxburgh, 1996; Vermeulen & Mustard, 2000) or because women are generally exposed to greater levels of stress than men (Bolger & Zuckerman, 1995; Roxburgh, 1996).

This latter explanation suggests that domestic responsibilities and marital status, along with job conditions, result in increased amounts of stress for women (Barnett & Brennan, 1997). More specifically, it has been suggested that higher stress levels for women reflect the social construction of gender and the dissimilar socialisation process of men and women (Ghorayshi, 2002). Professional women encounter unique sources of stress associated with their minority status and gender, and these stressors contribute to higher levels of overall stress compared with their male counterparts (Devanna, 1987; Greenglass, 1993). In addition, there is the possibility that a higher level of expectation for women to succeed in their roles, and this “pressure” of expectation represents a stress factor that is more prevalent for women than for men. This may be due to the fact that women’s roles are ingrained in the social and economic fabric, with substantial costs for women if they do not fulfil or decide not to take on the expected roles and responsibilities (Ghorayshi, 2002). It may also appear that men have the privilege of declining extra roles and responsibilities and focusing primarily on their personal development (e.g. career advancement, leisure activities), considering other tasks (including household work and caring for others) as menial and beyond their responsibility or duty (Armstrong & Armstrong, 1990).

Marital status has been found to be related to stress (Luecken et al., 1997; Preston, 1995; Thoits, 2006). The literature consistently reports that married working women with one or more children experience higher stress levels than both single men or women, and married men and women without children (Cooper & Payne, 1988; Taylor, 1995; Davidson & Luecken, 1997; Fielden, 1999). It has been suggested that higher stress levels in married working women with children are the consequences of the multiple and complex roles that these women have to perform. Contrary to the

clear relationship that has been identified between stress and age, marital status and educational level, the relationship between stress and gender is unclear.

One important factor in this relationship is the coping strategies with the illness. Significant differences between males and females were found following MI (Brink et al., 2002). Recently when testing gender and stress a significant difference was found between males and females. Women and men in the study used the same coping strategies. Women reported lower health and related quality of life after their first MI than men. King (2000) found that after a heart attack, men tend to reduce workload, and their partners take charge of their care. In contrast, after returning home from the hospital, women will take on household responsibilities very quickly (King, 2000). This explains the recent research findings which showed that female patients were more concerned about their family issues and individuals left at home. Wiklund et al. (1993) also found poorer health appraisal, more cardiac and other somatic symptoms in women than in men one year post infarction. As a consequence, if women report less well-being and more anxiety, the experience of cardiac illness may be more adverse for them than for men (Shumaker et al., 1997).

Research has yielded conflicting evidence about the differences in coping strategies between men and women. Women were significantly more likely to use certain strategies, such as seeking social support and escape-avoidance, than their partners (Jordan & Revenson, 1999). Similarly, Slusarcick et al. (1999) reported different mechanisms of stress reduction by men and women even though both were performing an identical stressful activity. Many of these studies indicate that men are more problem-focused while women are more emotion-focused in their use of

coping strategies (Blanchard-Fields, Sulsky, & Robinson-Whelen, 1991; Endler & Parker, 1990; Ptacek, Smith, & Zanas, 1992).

The relationship of gender to stressful experiences may be indirect via its relationship to coping and depressive symptoms (Barker, 2007). There is some indication that women are more likely than men to use avoidant and emotion-focused coping, but are no less likely to use problem-focused coping (Hamilton & Fagot, 1988; Long, 1990; Matud, 2004; Barker, 2007). There is also a consistent finding of higher levels of female depression beginning in adolescence that persist throughout adulthood (Mirowsky, 1996; Mirowsky & Ross, 2003). Depressive symptoms and avoidant coping may both serve as mediators of gender in relation to stressful experiences.

The need for family and social support was apparent in the current study, particularly among young patients (Table 5.9). Anxiety and stress levels were less among young patients using social support as a form of coping strategy than those patients with low social resources reflected by the availability of family and friends (Rueda & García, 2006a). These results are consistent with previous data about the relationship between functional social support and lower depression in young heart disease patients (Eriksen, 1994; Penninx et al., 1996; Rueda & García, 2006a, 2006b). This suggests that health protective action is encouraged through social resources (Uchino, 1996). The results obtained show some significant interactions between age/gender and perceived social resources. On the one hand, social support buffered the presence of negative events in men but not in women (Bosworth et al., 2000). Younger women reported more anxiety and lower life satisfaction than men and this result may be related to a lack of social support (Brink et al., 2002).

The effect of social support and a low level of stress perception was reported by female patients. This response may be mediated by adjustment to disease. Social support affects the coping strategies used, which eventually contribute to women's life satisfaction and well-being. Positively perceived social support is associated with benefits (Smith et al., 2000; Penninx et al., 1996) resulting in psychological adjustment to the illness in women and life satisfaction in men. It seems plausible that women recovering from an MI / coronary heart disease may bear a heavier burden of household responsibilities and activities than their male counterparts (Rose, Suls & Green, 1996). Women would encourage more positive coping strategies with their disease when they really feel cared for and emotionally supported. This could then be regarded as a greater perception of life satisfaction. Literature on social support has shown that women often describe their networks as supportive but sometimes demanding or overprotective (Kristofferzon et al., 2005). Also men, more than women, can obtain potential support from their partners (Hildingh, Segesten & Fridlund, 1997).

The method of admission to CCU also played a role in patients' perception of stress. In the current study 56.7% of CCU patients were hospitalised with unplanned or emergency admissions and 51.7% of patients were admitted for the first time (Table 5.1). Patients who were hospitalised in a CCU perceived more stress than those in surgical units (Pang & Suen et al., 2008). Patients who were hospitalised in a surgical ICU generally have experienced planned operations and are more prepared for the post-operative period. It may be surmised that as long as there are no complications, the time period for hospitalisation in the CCU may be predictable (e.g. 2–4 days).

Patients who were hospitalised in the CCU generally had chronic diseases. Being hospitalised in the CCU is critical because life-threatening events that generally happen unexpectedly. The time required to prepare patients for the treatment process and orient them for the CCU environment is usually inadequate (Biancofiore et al., 2005); therefore, unplanned and emergency CCU hospitalisations, along with an unknown period of stay, might cause more stress than normal for these patients. Coronary care nurses should be supplied with information such as the reason for CCU admissions; treatment and interventions at appropriate times and provide it to patients as soon as possible to enhance the recovery process (Niiyama et al., 2008). In similar studies, patients admitted into a CCU as an emergency case had a higher overall stress score compared with those admitted on planned admissions, but there was no statistical significance between the groups (Pang & Suen, 2008, 2009). Differences between these two studies may result from the sample size and participants' characteristics.

The results analysed revealed that both perceptions of CCU environmental stressors and nurse–physician relationships were significant predictors of the quality of care provided to patients. If patients and nurses felt that there were better nurse–physician relationships and a good hospital environment, they perceived a better quality of care. The findings from this study are congruent with those in other studies. Benner (2007) and Shen (2010) indicated that negative relationships between physicians and nurses may create a situation that puts patients at risk. Kramer and Schmalenberg (2003) also indicated that there is a positive correlation between the quality of nurse–physician relationships and clinical outcomes.

Several previous studies have also shown is a correlation between negative nurse–physician relationships and patient outcomes such as 30-day mortality rates, medical errors and length of hospital stay (Estabrooks et al., 2005; Kazanjian et al., 2005; Cowan et al., 2006). However, current research findings only partially support Manojlovich and DeCicco’s (2007) findings. They surveyed nurses in intensive care units and found that only nurse–physician communication was significantly related to medication errors, whereas the work environment failed to predict any patient outcomes, such as ventilator-associated pneumonia, catheter-associated sepsis and nurses’ reports of medication errors. The variance in results may be due to different forms of survey questions; therefore, further research using mixed methods to enable exploration into patterns of association between quality of care and the CCU environment is deemed to be necessary.

The quality of care is directly affected by patients’ perceptions of the nurse–physician relationship, as well as by their satisfaction with the hospital environment and years of education (DeCicco, 2007). Their conclusions indicated that the quality of care can be influenced by the work environment and professional relations (Welker-Hood, 2006, Kramer & Schmalenberg, 2008; Sevdalis & Brett, 2009).

In addition, Boswell et al. (2003) asserted that if nurses had good relationships with physicians, they would feel comfortable and confident communicating with them. McCauley and Irwin (2006) emphasised that true collaboration among interdisciplinary professionals in the workplace is important and effective for transforming the work environment to promote patient-focused care. These findings imply that if the hospital environment and nurse–physician relationships were improved, the quality of care could thrive.

Although the highest majority of nurses were bachelor-degree holders (27.1%), 18.6% held diplomas and had CCU experience of less than one year. Hurley et al. (2008) provide a qualitative description of how expert nurses in a coronary care unit identified, interrupted and corrected potentially fatal near misses. Hurley et al. (2008) identified antecedents of nurse-initiated interventions to reduce the imminent risk of patient harm: knowledge and expertise comprising clinical skills, ethical comportment, and self-efficacy. It has been suggested that people with a higher level of education are more optimistic and have more resources to cope with stressful situations than people who have lower levels of education (Finkelstein et al., 2007).

Passing a cognitive certification examination neither validates nor ensures competency at the bedside (Landon et al., 2008; Salcido, 2007). Accumulating evidence suggests that certified nurses perform better than non-certified nurses when tested on level of substantive specialty knowledge (Kendall-Gallagher & Blegen, 2009). For example, Hart et al. (2006), in a web-based examination designed to test the reliability of the pressure ulcer measure of the National Database of Nursing Quality Indicators (NDNQI) and to assess 256 nurses' knowledge of pressure ulcers, found that registered nurses certified in wound care management, with experience of more than two years in ostomy care, scored significantly higher than other nurses in the staging of ulcers.

Research findings indicated that all nurses without exception, complained about staffing levels in the CCU. They commented that shortage of staff to patient to nurse ratio prevents them from performing good nursing care. In recent years, this nurse-

patient ratio has been challenged, suggesting that nursing staff in coronary care units need to work more flexibly (Audit Commission, 1999; DoH, 2000, 2001, 2005). Since the 1960s, the nature and composition of the speciality of coronary care has changed considerably. Many of these clinical environments are now referred to as critical care units and have developed in response to advances in technology, surgical and medical techniques and procedures, managing an increasingly older patient population with complex diagnoses and co-morbidities (Intensive Care Society, 2003). Since the last comprehensive review of critical care services in England, patients are now assigned “levels of care” according to their dependency (Intensive Care Society, 2009). Critical care nursing has evolved and developed into a unique discipline that makes a distinctive contribution to patient outcomes.

A nursing team in a CCU is now potentially comprised of registered nurses, health care assistants, clinical educators, advanced critical care practitioners, assistant care practitioners, critical care outreach teams and consultant nurses (British Association of Critical Care Nurses, 2003; Department of Health, 2001, 2008a, 2008b). There is now a growing body of evidence to support not only nurses but also unit managers and health care commissioners, who are essential in determining the appropriate staffing levels for CCUs. The evidence included in the standards supports the higher ratio of nurses to deliver safe and effective CCU, and has been grouped into the following themes: infection control; the individual experience and competence of each nurse; size, geographical layout and number of beds in a unit; the need for larger units to have a supernumerary shift coordinator; case mix and patient dependency; mixed sex accommodation needs; teamworking; use of evidence-based protocols; ongoing education and development of coronary care nursing and administrative support for mandatory data collection (Intensive Care Society, 2003).

The standards for nurse staffing in coronary care units are stated as above. The challenge for CCU nurses in the future is to continue to develop and quantify such evidence, which ultimately demonstrates that a higher ratio of nurses leads to a positive impact on the outcomes of patients and their families. The speciality of intensive care has developed since the mid-1950s (Intensive Care Society, 2003); in England the original “gold standard” for nurse staffing in intensive care units was set in 1967 at a ratio of one nurse for each patient (British Medical Association, 1967). This was an indication at the time of the intensive support and nursing care such patients required for this new and developing speciality.

The most obvious means of reducing the workload of practitioners is to ensure that staffing levels are adequate, including administrative staff who could reduce the paperwork burden on nurses (Finlayson et al., 2002). Recent funding increases introduced by the government promise improvements in staff recruitment (Department of Health, 2002a), and the Department of Health (2003) has noted that there has been “excellent progress” in both recruitment and retention of nurses during the past two years, even exceeding their own forecasts. The document looks forward to the “largest substantial increase in funding (of the NHS) of any five-year period in its history”. However, Deeming and Harrison (2002) and Finlayson et al. (2002) suggest that the rate of increased recruitment cannot be sustained, as statistics have been influenced by an initial large influx of employees from overseas and also by those returning to nursing after a break in employment. Finlayson et al. also argue that year-on-year increases in newly trained nurses seem unlikely, as universities struggle to fill their student places. It will also be some time before a new initiative for Junior Scholarships (Department of Health, 2002c) to attract young people into nursing will make an impact.

The Royal College of Nursing (RCN, 2002) has identified that the NHS remains seriously understaffed, with an ageing staff profile, and so recruitment efforts perhaps should be seen as medium- to long-term measures that will produce limited significant improvement in workload stress in the near future. Leadership/management issues and professional conflict introducing a participative strategy for management is at the heart of human resource proposals within the “NHS Plan”, a long-term strategy for the delivery of health care in the UK (Department of Health, 2002a, 2002b). Ensuring an inclusive (i.e. “transformational”) leadership style would seem to be crucial to improving staff retention. This style engenders group cohesion and empowerment and has been found to be inversely correlated with burnout in nurses, but a “transactional” leadership style that is interventionist and potentially critical was positively associated with it (Stordeur et al., 2001).

The recent introduction of the Leading an Empowered Organization (LEO) training programme (developed by the Centre for the Development of Nursing Policy and Practice, University of Leeds, UK) for senior NHS staff is welcomed, together with proposals to extend the programme to more junior nurses (RCN, 2002). Improved leadership/management styles could also go some way to reducing interprofessional and intraprofessional conflict. Conflict with other professionals is a group cohesion / management issue, and would seem to require a culture shift if the problem is to be eradicated. The Royal College of Nursing (RCN, 2002) has urged that this issue be addressed quickly, as harassment from doctors, supervisors, managers and colleagues is an increasing cause of distress and absenteeism amongst nurses (Kivimaki et al., 2000; Ball et al., 2002).

Nurses called for the support of supervisors and managers and empowerment in the CCU. They believe that empowerment will increase their self-esteem and will help them to work better. While there has been considerable research on workplace empowerment in nursing (Laschinger, 1996; Kuokkanen & Leino-Kilpi, 2000; Laschinger et al., 2001) and, to a lesser extent, patient empowerment particularly in the patient education literature (Leino-Kilpi et al., 1998; Faulkner, 2001), there is no research that integrated both concepts in the nursing literature. It is widely assumed that if nurses are empowered within their workplace, they will provide better care, which will result in better patient outcomes. Yet, there are few explicit models in the nursing literature that incorporate both workplace empowerment of nurses and patient empowerment within a single explanatory framework.

Providing access to support is another empowering aspect of working with patients to produce positive patient outcomes. Nurses provide support for patients as they seek to meet important health goals and manage their health problems (Laschinger and Gilbert, 2010). Funnell and Anderson (2004) suggest that this can be accomplished by: (1) listening to patient-identified fears and concerns; (2) ascertaining patient beliefs, thoughts and feelings that might hinder or support their efforts; and (3) asking what patients need to obtain from their interactions with health care providers. Furthermore, they emphasise the need for providers to identify their role as coach or partner in the care process and to acknowledge and support patients' rights and responsibilities to make self-care choices and be the primary decision-makers (Laschinger and Gilbert, 2010). In clinical settings, nurses provide a supportive atmosphere conducive to optimal well-being and patient empowerment. Specifically, nurses work with patients to identify sources of social support within their personal and family situations. Nurses can help patients develop

a strong support network that will strengthen their ability to develop and maintain optimal health (Leino-Kilpi et al., 1999). Nurses can also create a supportive healing environment by maintaining a restful atmosphere, addressing patient complaints promptly, respecting patient choices and offering encouraging remarks for achieving specific health goals (Leino-Kilpi et al., 1999; Faulkner, 2001). These sources of support are similar to Kanter's (1993) notion of support for accomplishing work in different settings.

The NHS now requires a commitment from managers to remove harassment and discrimination (Department of Health, 2002b). How and when moves towards a more inclusive style of management will produce the culture shift required in practice remains to be seen, but it may take some time before the situation is sufficiently improved to have a significant impact on stress reduction and the essential development of a nurse-patient relationship is considered essential (Williams, 2001). Such "emotional labour" places considerable demands on those delivering health care (Phillips, 1996) and may reduce objectivity in caring (Williams, 2001). The identification of the need to cope with sick patients and their families as a source of distress for nurses, therefore, is not surprising.

Smith and Gray (2001) suggest that new patterns in learning to care are required to enable nurses to cope better with the emotional demands of their work. Constructive clinical supervision, mentorship and preceptorship, underpinned by an effective leadership style, will have a significant role to play here, especially for newly qualified nurses (Charnley, 1999; Gerrish, 2000). However, the introduction of preceptorship schemes in the UK has been patchy (Charnley, 1999), and more

effective mentorship is required to support nurses experiencing the emotional impacts of care (Smith & Gray, 2001).

Medicine has been accepted as the art and the science of healing, since its early origins, dating back to ancient Greece as witnessed in a text by Alcmaeon of Croton (c. 500 BC) (Bores et al., 2007). Today, in the era of technological progress and evidence-based medicine (EBM), we follow the constant development and publishing of a great number of clinical guidelines for diagnosis and management in medicine. The question of whether the “art of medicine” is compatible with the adoption of ubiquitous guides to practise medicine gains more actuality today than ever before and whether it fulfil patients’ needs or not is conjectural (Darlenski et al., 2010).

The main guidelines available within the two assigned trusts were from the National Institute for Health and Clinical Excellence (NICE). Clinical practice guidelines (CPG) are often used as a reference in malpractice judicial issues (Jonsen, 2006; Moses & Feld, 2008). Clinical practice guidelines are generally developed by medical societies, and their primary intention is to raise the effectiveness of a defined procedure or treatment and improve the outcome (Darlenski et al., 2010). The need for guidelines was mainly recommended by nurses with experience of less than one year in a CCU. This may be due to the fact that nurses with experience of less than one year found that it is much better to adhere to scientific evidence-based standards that are intended to protect the practitioner and the patient from malpractice (Darlenski et al., 2010). Nurses should be aware of the legal use of guidelines because, for instance, some guidelines include a disclaimer that they are

not intended and devised for the arena of the malpractice court (Moses & Feld, 2008).

Guidelines are generally advisory but not compulsory. The enhanced communications in medical research as well as the dynamic development of new methods in medical practice justify the incorporation of clinical guidelines in routine practice. For this reason, clinical guides require constant updating to incorporate the current best evidence in making decisions about the care of individual patients (Moses & Feld, 2008). One of the greatest advantages of the guidelines is the prevention of potential diagnostic and therapeutic mistakes, especially at the hands of young specialists. A guidelines-based practice is a chance to diminish errors. They act as a framework for health professionals to use in patient management (Andrews & Redmond, 2010).

A literature review confirmed that most acute care studies conducted to date concerning the effects of clinical practice guidelines examined the process of clinical care rather than the outcome for patients. For example, in Scotland, the use of guidelines resulted in more appropriate referral of patients to specialist care (Emslie et al., 1993). Such results are promising if it is assumed that improvements in the process of care will eventually result in improved outcomes for patients.

CHAPTER 7: RESEARCH CONCLUSION

7.1 Introduction

This chapter comprises a final conclusion for the entire project and the implications for the research in the nursing profession and nursing education will be highlighted.

This chapter will also include the research limitations and recommendations. It was found beneficial to share the PhD course experience reflecting what has been learned, what has been adjusted, what the obstacles for learning were and how the PhD programme has shaped the researcher as a person and as a future tutor.

7.2 Research Conclusion

As this study is the first study in the context of CCU stressors in the UK and the first study worldwide to use a mixed method approach to explore CCU stressors, the findings will provide baseline information to health care providers and health care organisations. Using numbers and norms to explore the stress phenomenon gave an in-depth explanation for the problem under study and allows the researcher to answer research questions and hypotheses. Although data from the current study concurs with the previous literature on the patients' experience of the stress phenomenon using single approach design (quantitative or qualitative), applying a mixed method design and specific sampling methodology painted a clear picture of the causes of CCU stressors and the effect of sampling characteristics on the perception of CCU stressors.

Patients' perceptions of CCU stressors were consistent within the entire research design; what patients ranked in the ESQ concurs with their narratives. Being in pain, not being able to sleep, restricted daily visits from family and friends, and restriction of movement by tubes and lines were perceived to be the most stressful items by CCU patients. Neither physiological nor psychological stressors were perceived equivalent by patients. Patient needs showed some overlap and interaction with each other. For example patients' anxiety caused by restricted family visits affected patients' sleep patterns and caused a somatic pain. At the same time patients complained from pain caused by intravenous lines, tubes and catheters, experienced sleep deprivation and/or levels of anxiety. Patients as an entire body should receive an equal assessment of their needs and should be assured about their safety and security.

Patients' autonomy in coronary care units appears to be an area that deserves more promotion and better attention. Coronary care nurses, apart from maintaining their

efforts to minimise the negative effects of the stressful CCU environment, need to equally focus on the patients' psychological needs such as rescheduling the visiting hours, reassuring the patients that these schedules were for their benefit, and allowing family participation in the care of the patient.

Patients' perceptions of stress may be influenced by their socio-demographic characteristics. The highest ranking of the ESQ was reported by young patients, predominantly females. High stress levels correlated with education achievements, particularly among African patients. This does not mean that older patients, males of other ethnicities other than Africans, did not experience the CCU as stressful but rather they adopted coping strategies to reduce the effect of stress. Also they used some supportive measures offered by relatives and the health team to overcome the stress phenomenon.

Findings obtained in this study particularly highlighted the effect of cultural beliefs and the identified variations in the perception of stress between Africans, Europeans and Asians. Patients, mainly Asians, turned to their religion using rituals and fatalistic practices. In the current study older patients perceived less stress than their counterparts because most of them relied on their cultural beliefs to cope with stress. Nurses need to be sensitive to the specific socio-cultural factors that influence their patients' perceptions of stress so that culture-specific interventions can be designed. All these measures, direct or indirect, may work towards the cultivation of a more humane CCU environment that could effectively reduce the stress and anxiety of patients. In addition, nurses should equip themselves with practical elements of stress management so that they can recognise the sources of stress and cope with

them effectively. Patients' perceptions of stress were influenced by their cultural beliefs.

Nurses' perceptions of patient stressors experienced in the CCU were reflected in the ranking of the ESQ physiological items such as being in pain, not being able to sleep, and items related to movement restrictions, for example having tubes in one's nose or mouth, being stuck with needles and lines, as the top environmental stressors the patient is most likely to suffer from during a stay in the CCU. The nurses' ranking system was based on nursing interventions rather than patients' actual needs. Nurses' ranking of the ESQ showed some deviations from their narratives in some items. For example nurses' narratives highlighted the need for family as a source of support for patients while in the CCU, but they ranked the ESQ items related to the presence of family and friends among the least important items.

When comparing patients' and nurses' perceptions of stressors experienced by patients in the CCU, nurses perceived a higher level of stress compared to patients. Items such as "fear of death" reflected nurses' fears of the ultimate failure in patient care. As discussed earlier nurses perceived stressors based on their nursing interventions rather than patients' needs. Patients also asserted that they were too ill to remember the CCU environment. Although the findings indicate that CCU patients did not find the CCU environment as stressful, nurses should keep in mind that patients may have only conformed to the "good patient" role. The stress levels of patients may actually be higher and thus require attention. Nurses must realise that they have a duty to care for patients despite staffing and time constraints.

Special psychological attention should be given to patients who are admitted as emergency cases or who need to stay in the CCU for a long period of time.

The results of this study suggest that nurses have significantly higher stress perceptions in many situations than their patients in a coronary care setting. Nurses must attempt to identify, and endeavour to cope with, the situations that patients listed as the most stressful. It is recommended that health care providers implement culture-sensitive bereavement practices, instil realistic hope and provide assurance to their patients where appropriate. Effective pain management strategies and stress-relieving measures may be further explored to help patients alleviate their stress and pain levels.

Although patients highlighted the care and support that was provided by CCU nurses, nurses felt unsatisfied with the delivery of care they provided to patients. This was perceived by nurses with CCU experience of less than one year who hold a diploma qualification in nursing. Coronary care nurses found that factors like shortage of staff, workload, nurse–physician miscommunication, lack of clinical guidelines and lack of counselling by CCU managers influenced the quality of care. Nurses should be well occupied with experience and knowledge to overcome work obstacles.

Progression along the continuum from positive stress (eustress) to negative stress (distress) is subjective, depending upon the relationship between an individual and his/her environment. Thus, whilst there is recognition that workload, leadership style, professional relationships, and emotional demands are the most frequently reported major factors that cause workplace distress for staff, it is clear that their

impact varies considerably. Initiatives introduced by the NHS to address the problem of stress in nursing have the potential to go some way towards improving the situation, although more comparative studies are required to clarify how interventions might be directed at specific clinical areas. The UK Government and NHS are seeking to improve the situation but, whilst initiatives will help, it is questionable whether they will remove the problem. Support services should be preventative, so that health problems for nurses can be averted. This requires more research into identifying the most effective way of detecting when nurses are experiencing early difficulties, and of improving their stress management techniques in order to prevent the transition to severe distress. Until the prediction of distress becomes possible, organisational initiatives to meet the needs of the majority remain the best starting point, but should not be expected to provide the answer for all nurses.

Nurses should provide individual patient assessment and appropriate nursing interventions. CCU nurses should be aware of patients' higher perceptions of stress in CCUs. Nurses should provide these patients with adequate information about the environment and procedures. They should aim to better practise communication with CCU patients to identify their needs.

Communication with CCU patients should continue until discharge to the ward. Coronary care managers should encourage the planning and implementation of the discharge plan for the continuity and evaluation of nursing care. If we return to Rorden and Taff's (1990) definition of discharge planning it is difficult to know how members of the health care team can work together in a coordinated manner to achieve mutually agreed upon goals and, ultimately, continuity of care. If

inadequate communication is perceived to be a major factor that both enhances and impedes the discharge planning process in critical care, this needs to be addressed.

The NHS should heed research evidence in the field of noise control. It has been recommended for the use of isolated rooms versus the open design CCU (Ulrich et al., 2004). Over the last 30 years research into sleep disorders in ambulatory patients has provided a strong set of physiological principles. The time is ripe for applying these principles to ill patients. A major challenge, as with most research in coronary care patients, is the difficulty in controlling confounding influences (e.g. emergency situations).

Coronary care unit managers need to consider pre-employment screening of potential staff in terms of personality and coping traits. Once recruited there will be a need to provide ongoing support to enable nurses to utilise the most appropriate coping strategies. Consideration should also be given to the provision of professional, emotional and social support in the workplace.

Based on multiple studies on the needs of patients' families and friends, it is important that nurses should now aim for visiting policies to meet these needs. In order to do so they should first be informed about the available empirical evidence regarding the benefits of less restricted visiting hours for the patient and their families and the effect of this on the nursing care delivery and the functioning of the CCU. Next the nurses should develop a clear CCU visiting policy with procedures that will be supported and reinforced by all nurses in the unit. For this to be success, a dialogue is needed in which nurses can discuss the benefits for, and needs of, the patient and his/her family and how they can accomplish this. Experience in CCUs

that already have open visiting hours can help in developing the visiting policy. Education is needed to ensure that the policy is implemented and that all nurses will work accordingly. Necessary evaluations will enable adjustments and new insights into the open visiting policy.

Over the coming years, as the population ages, and as technological advances continue, the CCU will play an even more prominent role in health care. As more complex procedures and interventions are performed on older, frailer people, demand for CCU beds will rise (Angus, 2001). Given the threat posed by the predicted severe nursing shortage (Coomber and Barriball, 2007; Shields and Watson, 2008), factors that increase the reported levels of perceived stress in CCU nurses must be identified and appropriate training to deal with stress should be provided. Stress in CCU nursing is unlikely to be fully alleviated; indeed the pace of change within the NHS may mean that there is a concomitant increase in the perception of workplace stress. The assessment of these situations, as they occur; and the strategies promoted to address them, are worthy of future study.

The development and the practical application of clinical guidelines is a dynamic process. The main challenges in this process are the need for constant updates and refinement of guides, harmonisation conformable to local health care policies, and avoidance of subjectivity in interpretation of the available scientific evidence. Clinical guidelines should not be accepted as a frame with insurmountable boundaries. Instead, they should be regarded as aids to, not substitutes for, clinical judgement and should represent the base of the scaffold on which the future development of the “art and science of medicine” would be built.

Finally patient care is organised within the Acute Hillingdon Trust and the North West NHS London Hospitals Trust based on the NICE online guidelines for ill patient in hospitals. Those guidelines were not found to fulfil patients' or even nurses' need for quality of care. All the stressors highlighted in the current study are not covered by the NICE guidelines. For example, there is no single policy to control sleep patterns. For pain numerous policies to control pain have been applied and yet pain is still one of the highest ranked CCU stressors by nurses and patients. This is because the main cause of pain is not related to the disease process but related to a combination of physiological and psychological consequences. Psychological support for CCU patients appears not to be of interest within the main guidelines. Clinical guideline policymakers and organisations should consider evidence-based practice to be the foundation when building new or evaluating available clinical guidelines.

7.3 Implication for Nursing

This study has important implications for nurses in planning patient care and in reducing the negative effects of the CCU environment on patients. Most of the environmental factors that cause stress and discomfort for patients in the CCU should be minimised by implementing the following:

1. Arranging a familiar and humane CCU environment; having individual patient assessment and appropriate nursing interventions, such as encouraging patients to verbalize their fear and anxiety; using effective communication techniques; ensuring that pain assessment and treatment of pain are effective. It is also important to provide an atmosphere in which rest is possible. In addition, the CCU physiological

and psychological stressors may have limited influence on patients who experience physical comfort.

2. The importance of sleep, especially for coronary care patients, needs to be incorporated into nurse education and proper assessment for quality of sleep needs to be emphasised. Specific focused sleep assessment using the right tools needs to be undertaken to accurately determine patients' sleep patterns. Nurses must organise their work so that unnecessary disruptions are avoided. Proper temperature regulation and noise reduction could help promote sleep.
3. Nurses should understand the primary needs of patients and give them the same priority as life-saving procedures.
4. Health care professionals should look for effective and practical measures in the CCU's routine in order to provide the best possible analgesia. For a patient, pain may be an esoteric concept, which may include feelings of anxiety, loneliness, hopelessness, fear and uncertainty. The label of pain should be explored as to what it means for the patient. The reality of practice transcends adherence to one philosophical viewpoint.
5. If nursing research is to guide nursing practice, there comes a need for nurse educators and clinical nurse specialists to incorporate these findings into nurse education and clinical practice.
6. Western society is fast developing a 24/7 culture and the work–life balance is becoming skewed towards work (Jones, 2003). Managers need to consider the

recruitment and retention of experienced staff that are able to keep their work and home life in balance so that they are less vulnerable to workplace stressors. The quality of working life is important not just for staff working in the NHS but also for the patients who require staff to provide adequate care. To retain experienced, better educated and effective personnel the NHS has recognised that it must be able to offer staff a better deal in their working lives (Department of Health, 2000). Coronary care nursing is, by nature, a 24/7 profession and it is a specialty where it is impossible to predict work patterns and workload on a day-to-day basis. Nonetheless, the basic principle of recognising people's need for an acceptable work-life balance still prevails. If management is to avoid the organisational consequences of high workplace stress, sickness, absences, staff turnover and increase in clinical errors, the retention of experienced staff should be a priority.

7. Nurses should be able to differentiate between patients' needs and their own personal needs.

8. Recognising the complexity and unpredictable nature of patients who are in acute settings, it may take time to define clearly the context of the discharge planning process in the coronary care environment and question not only the current expectation of commencement of the discharge planning process in coronary care, on the patient's admission, but also the role of the bedside nurse. This will not only eliminate confusion among nurses but, importantly, will improve the patient's transition of care whether it is to the general ward or the community, and hence will improve the continuity of their care.

9. Nurses when performing care for their patients should apply the full process of nursing care starting from assessment and ending with evaluation and reassessment.

The nursing process will be applied by nurses when nurses have enough time to work (e.g. one patient to one nurse) and when there is a well-educated nurse (e.g. with knowledge, experience, and skill).

7.4 Limitations

A major limitation of the current study is that the participants may not have shared how they really felt due to their cultural norms. The second limitation is not being able to meet the estimated sample size of 60 nurses due to staff shortage and research sampling methodology.

7.5 Recommendations in Practice

- In relation to the stressors identified
 1. The health care team should focus on pain management.
 2. New hospitals should be much quieter to reduce stress and improve sleep and other outcomes (e.g. recovery of patients). Noise levels will be substantially lowered by the following combination of environmental interventions: providing single-bed rooms, installing high-performance, sound-absorbing ceilings, and eliminating noise sources (for example using noiseless paging and phones).
 3. Design ward layouts and nurse stations to reduce the time staff spend walking, increase patient care time, and support staff activities such as communication.
 4. The care and support offered by families should be encouraged.
 5. Orientation and explanations should always be provided during a patient's stay in the CCU to reassure the patient, especially when related to movement restrictions. Coronary care nurses should explain the importance of the attached devices like cables, intravenous (IV) lines, etc. in monitoring and treatment.

- It is recommended to provide special training courses for CCU nurses that deal with stress identification and management.
- Nurses should attend workshops that deal with how to develop good patient–nurse communication skills.
- Nursing managers need to understand the current dimensions of work satisfaction in order to focus their recruitment and retention efforts to maximise their unit’s performance, productivity, stability and, ultimately, the quality of care delivered.
- CCU managers should work towards building trustful relations between staff nurses and CCU physicians. A key aspect of the nurse manager’s role is to create conditions that empower nurses to provide the best possible care for their clients/patients within an environment that fosters professional practice and effective working relationships. Similarly, it can be argued that the purpose of nursing practice is to empower patients/clients for optimal functioning or better health (Spence et al., 2010).
- More effective human resource management (HRM) (including recruitment) will be required in health care organisations (Nelson, 1997; Ambrose, 2002; Kanerva et al., 2010). The process of recruitment is a significant investment for the organisation, thus systematic evaluation of the future aims and needs of the organisation are essential elements of the recruitment process to achieve the organisation’s goals and to have a clear vision of the kind of employee that is being sought (Bretz & Judge, 1994; Chambers, 2002; Donaher et al., 2007; Storey, 2007).

- The future perspectives in the field of clinical guidelines development can be summarised as follows:
 1. Constant updates are needed to increase the efficacy and keep the clinical guidelines current with the accumulated evidence (Bigby, 2000). The Cochrane Systematic Reviews are a reliable ground for guideline development because authors are expected to actualise their reviews annually.
 2. The clinical guidelines should include information on the cost of the defined treatment as well as a comparison to alternative methods and preventive strategies (Hornby, 2000).
 3. The development of methods for monitoring clinical guideline use in health care is needed to increase feedback on how effective the use of clinical guidelines is with respect to medical practice (Hutchinson, 2003).
 4. The individualised approach to each patient is the next step in the development of the medical science, mirrored by the principles of personalised medicine: medical treatment tailored to an individual's phenotypic, clinical, genetic and molecular information (Vlahov, 2007). Hence, clinical guidelines will have to be adapted to this new concept.
 5. The clinical guidelines should include parts related to nursing care in terms of including some nursing protocols in nursing interventions.
 6. The clinical guidelines should emphasise the practice of psychological needs as well as the physiological ones to improve patient care and to reduce patient stress.

7.6 Recommendations for Future Research

- For further studies it is recommended a follow-up two-phase study be undertaken using the same instrument (ESQ) but with additional narrative questions that assess the level of stress of patients in a CCU. The first phase ranking of the ESQ will be

based on questions that give in-depth explanations for all steps taken to manage stressors by patients or nurses.

- It is recommended that an educational programme for CCU nurses is provided to enhance their knowledge of the primary needs of CCU patients (e.g. thirst) which are as equally important as life-saving procedures (e.g. suctioning) and to promote nursing practice to reduce psychological stress in patients.
- Further research should examine the effectiveness of pre-CCU visits and CCU nurses should be given training in communication and counselling skills for this purpose.
- Future research should examine the effect of a CCU nurse's orientation and explanation of CCU admission to the patient while they are in pre-admission departments like emergency or other hospital floors. This could be completed when answering the question "What is the clinical and cost effectiveness of a structured educational programme to improve recognition of, and response to, acute illness compared with no structured programme in improving outcomes for people who clinically deteriorate in general hospital ward settings?" as recommended in the Acutely Ill Patients in Hospitals guidelines (CG50) (Appendix K).
- Pain was acknowledged by both nurses and patients and it is recommended that more research examine alternative treatments such as transcutaneous electrical nerve stimulation (TENS), therapeutic touch, relaxation, massage and acupuncture (Campbell & Happ, 2010) to explore their applicability and effectiveness in acute care. As recommended by the Acutely Ill Patients in Hospital Guidelines (CG50)

(Appendix K) the following question should be posed: “What is the clinical effectiveness and cost effectiveness of automated (electronic) monitoring systems compared with manual recording systems in identifying people at risk of clinical deterioration in general acute hospital settings?”

- Future research and in-service education is needed to examine the importance of sleep and the ways to minimise noise level, maintain day/night rhythms and promote uninterrupted sleep.
- More research is needed into proper and effective ways of monitoring and assessing quality of sleep in coronary care patients.
- Further studies are recommended to study the effect of different types of visits on patients, families and nurses and to study the incorporation of family members in the care of patients. Contract visits (Spren & Schuurmans, 2010) are one way to allow more control by patients and their families on who should come, when they come and how long visits should be, and nurses can negotiate with clients to minimise the disturbance to the unit.
- Future studies should also be designed to examine the effect of open unit design and private room design on the patients’ stress response.
- Further research is also needed to explore effective discharge planning models within the Critical Care Unit. It was recommended by the Acutely Ill Patients in Hospital guidelines (CG50) to research the following:
 - What is the clinical and cost effectiveness of providing structured educational advice (such as an information booklet) compared with usual care to patients who have been transferred from critical care areas back to general hospital ward settings?

- What is the clinical and cost effectiveness of a transfer facilitator for patients transferred from critical care to a general ward environment? Such research could include outcome measures on:
 - patient satisfaction
 - time to discharge from acute hospital
 - destination when transferred.

Future research is needed to compare CCU nurses' perception of CCU stressors experienced by patients with their previous experience in medical or surgical ICUs.

This was a research recommendation stated within the A Ill Patients in Hospital guidelines (CG50) (Appendix K).

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APPENDICES

APPENDIX A

APPROVAL: RESEARCH ETHICS COMMITTEE
FROM BRUNEL UNIVERSITY

School of Health Sciences and
Social Care

Research Ethics Committee

School of Health Sciences and
Social Care
Brunel University,
Uxbridge
Middlesex UB8 3PH
Telephone: +44 (0)1895 274000
Web www.brunel.ac.uk

26 February 2009

Proposer: Rafa T.A.Qaid – PhD Student

Title: Patients' and Nurses' perspectives of Patients' Experience for Coronary Care Unit Stressors Using a Mixed Method Approach

Reference: 08/10/PHD/09

Letter of Approval

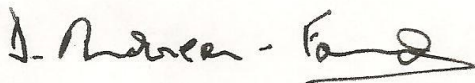
The School Research Ethics Committee has considered the amendments recently submitted by you in response to the Committee's earlier review of the above application

The Chair, acting under delegated authority, is satisfied that the amendments accord with the decision of the Committee and has agreed that there is no objection on ethical grounds to the proposed study. Approval is given on the understanding that the conditions of approval set out below are followed:

- *The agreed protocol must be followed. Any changes to the protocol will require prior approval from the Committee.*

NB:

- Research participant information sheets and (where relevant) flyers, posters and consent forms, should include a clear statement that research ethics approval has been obtained from the School of Health Sciences and Social Care Research Ethics Committee.
- The Research Participant Information Sheets should include a clear statement that queries should be directed, in the first instance, to the Supervisor (where relevant), or the researcher. Complaints, on the other hand, should be directed, in the first instance, to the Chair of the School Research Ethics Committee
- Approval to proceed with the study is granted subject to receipt by the Committee of satisfactory responses to any conditions that may appear above, in addition to any subsequent changes to the protocol.



David Anderson-Ford
Chair, Brunel University Research Ethics Committee
School Research Ethics Officer, School of Health Sciences and Social Care

School of Health Sciences and
Social Care

Research Ethics Committee

School of Health Sciences and
Social Care
Brunel University,
Uxbridge
Middlesex UB8 3PH
Telephone: +44 (0)1895 274000
Web www.brunel.ac.uk

26 February 2009

STATEMENT OF SPONSORSHIP/INDEMNITY

Proposer: Rafa T.A.Qaid – PhD Student

Title: Patients' and Nurses' perspectives of Patients' Experience for Coronary Care Unit Stressors Using a Mixed Method Approach

Reference: 08/10/PHD/09

This is to confirm that the above named research project utilises human participants, their organs, tissue and/or data as defined under the sponsorship requirements of the Research Governance Framework for Health and Social Care 2005, incorporating the Medicines for Human Use (Clinical Trials) Regulations 2004.

On behalf of the School of Health Sciences and Social Care, Brunel University, we undertake to act as the identified Research Sponsor for this project.

This letter confirms:

- The research proposal has been discussed, assessed and registered with the Research Ethics Committee of the School of Health Sciences and Social Care, Brunel University and, following internal scrutiny and approval in accordance with Brunel University Research Ethics Standard Operating Procedures, provisional sponsor approval is granted.
- The Chief Investigator has undergone a process of scientific critique commensurate with the scale of the project.
- Indemnity and insurance arrangements have been put in place to cover the project
- Resources and support are available to the researcher(s) to aid delivery of the research as proposed.
- The School of Health Sciences and Social Care will undertake and enforce those sponsor duties set out in the NHS Research Governance Framework for Health and Social Care.

Sponsorship is conditional on the project receiving applicable ethical and regulatory approval for all research-related aspects of its conduct. A copy of the ethics approval letter **must** be sent to the Chair of the School Research Ethics Committee prior to the study commencing.

(Where relevant) sponsorship is dependent on obtaining R& D Office approval for all NHS sites where the research is being conducted.

Yours sincerely,



David Anderson-Ford
Chair, Brunel University Research Ethics Committee

select

Part J: Professional Negligence

This Schedule replaces any previous Schedule. The Schedule and Policy are to be read together.

INSURED: Brunel University
Policy No: NHE-01CA29-0013
Period of Insurance
from: 1st August 2008
to: 31st July 2009

Clinical Trial

any investigation or series of investigations conducted on any person for a medicinal purpose

Injury

bodily injury including death, illness and disease

SECTION 2 – Cover


The INSURER will provide compensation as detailed in the Compensation Agreement in this Section at the INSURED'S request in respect of accidental Injury of any Research Subject occurring within the Geographical Limits and arising out of SERVICE A, for which a claim is first made against the INSURED and is notified to the INSURER during the Period of Insurance or not more than 12 months following the termination of the Part whichever happens first.

Compensation Agreement

Compensation will be paid when on the balance of probabilities a serious Injury of enduring and disabling character (including exacerbation of an existing condition) was attributable to the Research Subject's participation in a Clinical Trial or any clinical intervention or procedure that would not have occurred but for the inclusion of the Research Subject in the Clinical Trial.

Where there is an adverse reaction to a medicinal product in a Clinical Trial and a serious Injury of enduring and disabling character is caused by a procedure adopted to deal with

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policy reference: FEHE 003
Schedule no: 08 2 of 9
issue date: 14 August 2008
examined: 

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APPENDIX B

**CONFIRMATION OF ETHICAL OPINION
NATIONAL RESEARCH ETHICS COMMITTEE**



National Research Ethics Service

The Joint UCL/UCLH Committees on the Ethics of Human Research (Committee A)

ICiH Research & Development Directorate Office

1st Floor, 3 Long Yard

London WC1N 1EH

POSTAL ADDRESS

R&D Department, Institute of Child Health,

30 Guilford Street, London

WC1N 1EH

Telephone: 0207 905 2703

Facsimile: 0207 905 2201

19 June 2009

Miss Rafa Qaid
Room 1, Flat 73 Hall (H) Isambard Complex
Brunel University (West London)
Station Road
Uxbridge
UB8 3FG

Dear Miss Qaid

Study Title: Patients' and Nurses' Perspectives on Patients' Experience for
Coronary Care Unit Stressors Using a Mixed Method Approach.
REC reference number: 09/H0714/24
Protocol number: 1

Thank you for your letter of 01 June 2009, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information was considered in correspondence by a sub-committee of the REC held on 19 June 2009. A list of the sub-committee members is attached.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

For NHS research sites only, management permission for research ("R&D approval") should be obtained from the relevant care organisation(s) in accordance with NHS research governance arrangements. Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>. *Where the only involvement of the NHS organisation is as a Participant Identification Centre, management permission for research is not required but the R&D office should be notified of the study. Guidance should be sought from the R&D office where necessary.*

Sponsors are not required to notify the Committee of approvals from host organisations.

This Research Ethics Committee is an advisory committee to London Strategic Health Authority
The National Research Ethics Service (NRES) represents the NRES Directorate within
the National Patient Safety Agency and Research Ethics Committees in England

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Response to Request for Further Information	2	28 May 2009
Participant Information Sheet	3	28 May 2009
Participant Information Sheet: CCU Nurses PIS	3	28 May 2009

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Service website > After Review

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

The attached document "*After ethical review – guidance for researchers*" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

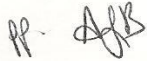
- Notifying substantial amendments
- Adding new sites and investigators
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nres.npsa.nhs.uk.

This Research Ethics Committee is an advisory committee to London Strategic Health Authority
*The National Research Ethics Service (NRES) represents the NRES Directorate within
the National Patient Safety Agency and Research Ethics Committees in England*

Yours sincerely



Dr Geoff Scott
Chair

Email: S.Vandayar@ich.ucl.ac.uk

Enclosures: List of names and professions of members who were present at the meeting.
After ethical review – guidance for researchers

Copy to: Chair David Anderson-Ford
Alan Warnes

The Joint UCL/UCLH Committees on the Ethics of Human Research (Committee A)

Attendance at Sub-Committee of the REC meeting on 19 June 2009

Committee Members:

<i>Name</i>	<i>Profession</i>	<i>Present</i>	<i>Notes</i>
Dr Raymond Noble	Sub-Dean Medical School	Yes	
Dr Geoff Scott	Microbiologist	Yes	

This Research Ethics Committee is an advisory committee to London Strategic Health Authority
The National Research Ethics Service (NRES) represents the NRES Directorate within
the National Patient Safety Agency and Research Ethics Committees in England

Patient Participation Information Sheet

Version 3
28\05\2009

School of Health Sciences and Social Care
Brunel University,
Uxbridge,
Middlesex UB8 3PH
Telephone: +44 (0)1895 274000
Web www.brunel.ac.uk

"Patients' and Nurses' Perspectives on Patients' Experience for Coronary Care Unit Stressors"

Dear Sir/Madam, we would like to invite you to participate in a research study. Before you decide you need to understand why this research is being done and what it will involve. Please take time to read the following information carefully. Talk to others about the study if you wish. The coming part tells you the purpose of this study and what will happen to you if you take part. This information sheet is yours to keep. Ask us if there is anything that is not clear or if you would like more information. Contact details are at the bottom of this information sheet. Take time to decide whether or not you wish to take part. Thank you for taking the time to read this.

If you decide that you wish to participate in this project you will be asked to inform the Head nurse or the attending staff.

❖ **What is the research about?**

This research attempts to explore the perception of patients' and nurses' regarding discomfort experienced by patients in CCU and to identify to what extent discomfort is covered by the main clinical guidelines.

❖ **What will this study achieve?**

The purpose of the proposed research is to:

1. Explore how patients' and nurses' see discomforts experienced by patient in CCU.
2. Compare patients' experience of being in-patient in CCU.
3. Compare nurses' perspectives of patients' experience in CCU.
4. Identify the effect of patient and nurse socio-demographic characteristics (such as age, sex, educational level...) on the way you felt.
5. And from the outcome, it is hoped that the researcher will be able to see whether guidelines adequately cover the physical and psychological needs of CCU patients.

❖ **Why have I been invited?**

You have been invited to take part in this study because we are interested in listening to your experience of being a CCU Patient and because you meet the criteria to fulfil this research. You have been selected because you are a patient with history of cardiac disease (ischemic heart disease, arrhythmias, cardiogenic shock, etc) and you spent a minimum of 3 days and maximum of 5 days in CCU. We hope that you will be able to give answers to the open-ended questions in an interview and to fill in the research questionnaire. We are also interviewing CCU nurses but they will not necessarily be ones who have been involved in your care.

❖ **Do I have to take part?**

Participation in any stage of the study is completely voluntary. If you decide not to participate in the study the treatment that you receive as a patient will not be influenced in any way. You are invited to participate in an interview to explore your experience of being a coronary care patient and what are the types of discomfort you faced during your stay.

❖ **What will happen to me if I take part?**

If you are interested in participating in the study, you will be invited to take part in an individual interview to discuss your experience at the coronary care unit. The discussion will take place in your room and may take up to 60 minutes to complete. You only need to have one interview. Before commencing the discussion to talk about your experience you will be asked to complete a Consent Form. By signing this Consent Form you consent to participate in the study. You also agree to allow the researcher to tape record your discussion. The information generated from the discussion will then be looked at by the chief investigator only.

❖ **What are the possible disadvantages or risks of taking part?**

Before consenting to participate in the discussion, I will discuss the types of questions that you will be asked. This is because the subject of the discussion may be emotive for you and it may make you remember unpleasant or uncomfortable experiences or events. Please be assured that the interview can be stopped at any time to allow you to rest and to re-commence the discussion when you feel ready or if you wish to terminate the interview. The researcher will be available to discuss with you your concerns and difficulties.

❖ **What are the possible benefits of taking part?**

A benefit of participating in the study is that you can openly share your views and that you may gain experience of being involved in a study of improving knowledge and practice. The researcher hopes your participation will improve the quality of care in CCU.

❖ **Will my taking part in this study be kept confidential?**

All information which is collected about you during the course of this study will be kept strictly confidential. The discussion will be tape recorded to ensure that an accurate account of the discussion is maintained. Your tape recorded responses and the direct quotations from the discussion may be published in presentations and publications but you will be given a coded number and your identity will not be revealed in any papers or reports that are produced as a result of this study.

❖ **What will happen if I don't want to carry on with the study?**

The study is entirely voluntary, and you have the right to withdraw at any time without affecting your treatment plan.

❖ **What if there is a problem?**

If you have any concerns about any aspect of the study, you should ask to speak to the researcher who will do her best to answer your questions (Miss\Rafa T.Qaid – 07533226306 or E-mail: Rafa.Qaid@brunel.ac.uk . or contact Supervisors: 1-Maggi.Banning@brunel.ac.uk and 2- E-mail: Panagiota.Nikopoulou-Smyrni@brunel.ac.uk.

❖ **Will my taking part be kept confidential even after research finish?**

All information which is collected about you during the course of the research will be kept strictly confidential. Data generated will be stored in a locked cabinet for security reasons during the research time. The tape recording will be destroyed after the research has finished. Access to the information will be restricted to the researchers only. A copy will be stored separately on the password protected University computers for about 5 years.

❖ **What will happen to the results of the study?**

The researcher hopes to publish the findings from this research study in medical and nursing journals. The data collected from the study will be for educational purposes to gain a degree but will also be presented at national and international conferences. The data generated will be presented as direct quotations in presentations and in research publications. You are assured that your identity will not be revealed in any publications that arise from the study. On conclusion of the study a full report will be published. It is hoped that the information collected during this study will be used in planning future patient care. Please let the researcher know if you would like to have a copy (summary) of the research findings.

❖ **Who is organising and funding the research?**

The researcher is under scholarship from Sana'a University-The Republic of Yemen for PhD degree.

❖ **Who has reviewed the study?**

Ethical approval has been agreed by the School of Health Sciences and Social Care Research Ethics Committee, and the National Research Ethics Service (<http://www.iras.UK>.) (The Joint UCL/UCLH Committee on the Ethics of Human Research 'Committee A').

Thank you for your interest in the study.

Who I am

My name is Rafa T.Qaid. I am a medical surgical lecturer based at Medical and Health Sciences College - Sana'a University- Republic of Yemen. If you wish to contact me to discuss any aspect of the study please telephone me on 07533226306 or e-mail me directly at Rafa.Qaid@brunel.ac.uk.

Miss Rafa T.Qaid
Principle Investigator
PhD student
School of Health Sciences and Social Care
Brunel University (West London)
Uxbridge - Middlesex
Rafa.Qaid@brunel.ac.uk
Tel: 07533226306 or 07501002292

APPENDIX D

CCU Nurses Participation Information Sheet

Version 3
28\05\2009

Brunel
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School of Health Sciences and Social Care
Brunel University,
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Middlesex UB8 3PH
Telephone: +44 (0)1895 274000
Web www.brunel.ac.uk

"Patients' and Nurses' Perspectives on Patients' Experience for Coronary Care Unit Stressors"

Dear Sir/Madam, we would like to invite you to participate in a research study. Before you decide you need to understand why this research is being done and what it will involve. Please take time to read the following information carefully. Talk to others about the study if you wish. The coming part tells you the purpose of this study and what will happen to you if you take part. This information sheet is yours to keep. Ask us if there is anything that is not clear or if you would like more information. Contact details are at the bottom of this information sheet. Take time to decide whether or not you wish to take part. Thank you for taking the time to read this.

If you decide that you wish to participate in this project you will be asked to inform the Head Nurse.

❖ **What is the research about?**

This research attempts to explore the perception of patients' and nurses' about discomfort experienced by patients in CCU and to identify to what extent discomfort is covered by the main clinical guidelines.

❖ **What will this study achieve?**

The purpose of the proposed research is to:

1. Explore the perspectives of patients' and nurses' regarding discomforts experienced by patient in CCU.
2. Compare patients' experience of being in-patient in CCU.
3. Compare nurses' perspectives of patient experience in CCU.
4. Identify the effect of patient and nurse socio-demographic characteristics (such as age, sex, educational level,.....) on the way you felt.
5. And from the outcome, it is hoped that the researcher will be able to see whether guidelines adequately cover the physical and psychological needs of CCU patients.

❖ **Why have I been invited?**

You have been invited to take part in this study because we are interested in listening to your point of view on patient experience of being in CCU and because you meet the criteria to fulfil this research. You have been selected because you are a nurse with a range of education between (diploma and master degree) and with professional experience greater than 6 months working in CCU or another medical or surgical critical care unit to enable comparisons regarding perspectives and to rate the Environmental Stressor Questionnaire "ESQ". We are also interviewing CCU patients but they will not necessarily be ones with whom you have been involved.

❖ **Do I have to take part?**

Participation in any stage of the study is completely voluntary. If you decide not to participate in the study your job within the Trust will not be influenced in any way. You are invited to participate in an individual interview to explore your perspective on patient experience of being in coronary care unit and what are the discomforts they faced during their stay in order to improve the quality of care.

❖ **What will happen to me if I take part?**

If you are interested in participating in the study, you will be invited to take part in an individual interview to discuss patient experience at the coronary care unit and to rate the "ESQ" questionnaire. The discussion will take place in a convenient location and time and may take up to 60 minutes to complete. You only need to attend the discussion once. Before commencing the interview you will be asked to complete a Consent Form. By signing this Consent Form, you consent to participate in the study. You also agree to allow the researcher to tape record your interview. The information generated from the discussion will then be looked at by the chief investigator only.

❖ **What are the risks of taking part?**

Before consenting to participate in the discussion, I will discuss the types of questions that you will be asked. This is because the subject of the discussion may be emotive for you and it may make you remember painful or uncomfortable experiences or events while providing care in the CCU sitting. Please be assured that the interview can be stopped at any time to allow you to rest and to re-commence the interview when you feel ready or if you wish to terminate the discussion.

❖ **What are the possible benefits of taking part?**

After reviewing a number of research studies the researcher hope this research will provide:

1. Evidence to stimulate nurses to think and reflect on their current practice.
2. A knowledge base for the refinement of nursing practice in critical and transition care settings and raise awareness of patient/nurse communication needs,
3. And will allow better integration of services and continued support necessary for survivors of critical conditions.

❖ **Will my taking part in this study be kept confidential?**

All information which is collected about you during the course of this study will be kept strictly confidential. The interview will be tape recorded to ensure that an accurate account of the discussion is maintained. Your tape recorded responses and direct quotations from the discussion may be published in presentations and publications but you will be given a coded number and your identity will not be revealed in any papers or reports that are produced as a result of this study.

❖ **What will happen if I don't want to carry on with the study?**

The study is entirely voluntary, and you have the right to withdraw at any time without affecting your work with the Trust.

❖ **What if there is a problem?**

If you have any concerns about any aspect of the study, you should ask to speak to the researcher who will do her best to answer your questions (Miss/Rafa T.Qaid – 07533226306 or E-mail: Rafa.Qaid@brunel.ac.uk . or contact Supervisors: 1- Maggi.Banning@brunel.ac.uk and 2- Panagiota.Nikopoulou-smyrni@brunel.ac.uk).

❖ **Will my taking part be kept confidential even after the research finish?**

All information which is collected about you during the course of the research will be kept strictly confidential. Data generated will be stored in a locked cabinet for security reasons and kept for a period of 5 years. The tape recording will be destroyed after the research

has finished. Access to the information will be restricted to the researchers only. A copy will be stored separately on the password protected University computers.

❖ **What will happen to the results of the study?**

We hope to publish the findings from this research study in medical and nursing journals. The data collected from the study will be for study purposes to gain an educational degree but will also be presented at national and international conferences. The data generated will be presented as direct quotations in presentations and in research publications. You are assured that your identity will not be revealed in any publications that arise from the study. On conclusion of the study a full report will be published. Please let the researcher know if you would like a copy (summary) of the findings. It is hoped that the information collected during this study will be used in planning future patient care.

❖ **Who is organising and funding the research?**

The researcher is under scholarship from Sana'a University - The Republic of Yemen for PhD degree.

❖ **Who has reviewed the study?**

Ethical approval has been agreed by the School of Health Sciences and Social Care Research Ethics Committee, and the National Research Ethics Service (<http://www.iras.UK>) (Committee A).

Thank you for your interest in the study.

Who I am

My name is Rafa T.Qaid. I am a medical surgical lecturer based at Medical and Health science college-Sana'a University- Republic of Yemen. If you wish to contact me to discuss any aspect of the study please telephone me on 07533226306 or e-mail me directly at Rafa.Qaid@brunel.ac.uk.

Miss Rafa T.Qaid
Principle Investigator
PhD student
School of Health Sciences and Social Care
Brunel University (West London)
Uxbridge - Middlesex
Rafa.Qaid@brunel.ac.uk
Tel: 07533226306 or 07501002292

APPENDIX E

Patients Consent Form

Version3
28/05\2009

School of Health Sciences and Social Care
Brunel University,
Uxbridge,
Middlesex UB8 3PH
Telephone: +44 (0)1895 274000
Web www.brunel.ac.uk

- ❖ **Research Study:** Patients and Nurses Perspectives on Patients Experience for Coronary Care Unit Stressors.
- ❖ **Principle investigator:** Miss/ Rafa Qaid.

The participant should complete the whole of this sheet herself/ himself:-

	Yes	No
1. I confirm that I have read and understand the information sheet dated (28/05\2009) for the above study and have had the opportunity to ask questions and have had these answered satisfactorily.	<input type="checkbox"/>	<input type="checkbox"/>
2. I understand that participation is voluntary and that I'm free to withdraw at any time, without giving any reason, without legal rights being affected.	<input type="checkbox"/>	<input type="checkbox"/>
3. I understand the reason of being selected to take part in the study.	<input type="checkbox"/>	<input type="checkbox"/>
4. I understand the interview will be tape recorded and direct quotations may be included anonymously in publications generated for the study.	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

6. I agree to take part in the above research.

_____	_____	_____
name of nurse	date	signature
_____	_____	_____
name of person taking consent	date	signature
_____	_____	_____
name of researcher	date	signature

APPENDIX G

Interview guidance for Patients

Brunel
UNIVERSITY
WEST LONDON

School of Health Sciences and Social
Care
Brunel University,
Uxbridge,
Middlesex UB8 3PH
Telephone: +44 (0)1895 274000
Web www.brunel.ac.uk

Version 1
10\03\2009

"Patients' and Nurses' Perspectives on patients' Experience for Coronary Care Unit Stressors Using a Mixed Method Approach"

An agreement will be made with the cardiology ward nurse manager and the attending staff to distribute the information sheet and consent form to patients who meet the inclusion criteria. The researcher will conduct interviews 24-48 hours from patients' time of admission to the cardiology ward. This timing has been to combat the good patient syndrome in which patient inside CCUs avoid labelling items as stressful for fear of being perceived as complainers (Hweidi, 2005). Patients who give a written consent will be interviewed on one occasion in a convenient time and place selected by the onsite supervisor to talk in-depth about their experience at the coronary care unit. The following is an example of questions that patient would be asked during unstructured interview:-

1. Can you tell me about your experience as a patient on a CCU, please?
2. Have you discussed your concerns with either a nurse or a doctor?
3. What type of support did you receive?
4. Who offered the support, a nurse or a doctor?

At the end of interview the patients will be asked to rate the Environmental Stressor Questionnaire (ESQ). The ESQ uses a rating scale of 1-4 in which 1=not stressful and 4=extremely stressful. Part of the questionnaire also asks the respondents to list the three most stressful items together with any items they think should be added to the questionnaire. Content and face validity was examined by the researchers (Cochran and Ganong, 1989), and the reliability of the tool assured by Cornock (1998) in his replication of Cochran and Ganong study, (the reliability coefficient is 0.70).

The "ESQ" has been used by previous researchers who tried to understand the stress phenomena in General ICUs and critical care units (Cochran & Ganong, 1989; Noaes, et al, 1997; Cornock, 1998; Novaes, et al, 1999; So & Chan; 2004; Hweidi, 2005), in liver transplant ICUs (Biancofiore, et al, 2005), and in CCU (Marosti & Dantas, 2006) which make it a flexible tool to be used in different settings.

For internal consistency reliability "Cronbach's alpha coefficient" will be calculated as this the most appropriate approach to estimate internal consistency, which based on interrelation of all items in the scale, and the pilot study will be conducted using the 10% of the sample size.

The questionnaire will include some socio-demographic data for patients'(gender, age, diagnosis, marital status, educational level, number of previous admissions, and type of admission "planned or emergency") and nurses'(gender, age, educational level, experience in CCU, experience in other medical and surgical critical care unit).

Reviewed By Academic Supervisor:

Dr. Maggi Banning: Director of Health\senior lecturer- Advance clinical Practice in Health studies and Community Health Nursing- Brunel University (West London)

APPENDIX H

Interview Guidance for Nurses

Version 1
11\03\09

"Patients' and Nurses' Perspectives on Patients' Experience For Coronary Care Unit Stressors Using a Mixed Method Approach"

The researcher will request the nurse managers of CCU to distribute the information sheet and consent form to the nurses who meet the inclusion criteria. The nurse who shows interest and gives a written consent will be interviewed in a convenient time and place. The following is an example of some questions that will take place in interview:

1. Do you think the CCU is a stressful environment for patients? Can you identify any of these stressors?
2. What are the main stressors patients acknowledge?
3. Do you think Physical (e.g. pain, sleep disturbance) or psychological (e.g. separation from family or lack of privacy) would be ranked as high stressors for patients?
4. Can you give me a case example, please?
5. Can you compare your work with patient in CCU with your work with patient in any other medical or surgical intensive care unit?

At the end of interview nurses will be asked to rate the environmental stressors questionnaire "ESQ" from their own perspective. The ESQ uses a rating scale of 1-4 in which 1=not stressful and 4=extremely stressful. Part of the questionnaire also asks the respondents to list the three most stressful items together with any items they think should be added to the questionnaire. Content and face validity was examined by the researchers (Cochran and Ganong, 1989), and the reliability of the tool assured by Cornock (1998) in his replication of Cochran and Ganong study, (the reliability coefficient is 0.70).

The "ESQ" has been used by previous researchers who tried to understand the stress phenomena in General ICUs and critical care units (Cochran & Ganong, 1989; Noaes, et al, 1997; Cornock, 1998; Novaes, et al, 1999; So & Chan; 2004; Hweidi, 2005), in liver transplant ICUs (Biancofiore, et al, 2005), and in CCU (Marosti & Dantas, 2006). This makes it a flexible tool that can be used in different settings.

For internal consistency reliability "Cronbach's alpha coefficient" will be calculated as this the most appropriate approach to estimate internal consistency, which based on interrelation of all items in the scale. A pilot study will be conducted using the 10% of the sample size.

The questionnaire will include some socio-demographic data for patients'(gender, age, diagnosis, marital status, educational level, number of previous admissions, and type of admission "planned or emergency") and nurses'(gender, age, educational level, experience in CCU, experience in other medical and surgical critical care unit).

Reviewed By The Academic Supervisor:

Dr. Maggi Banning: Director of Health\senior lecturer- Advance clinical Practice in Health studies and Community Health Nursing- Brunel University (West London).

APPENDIX I

Environmental Stressor Questionnaire

For Patients

Version1
11/03/09

"Patients' Experiences for Coronary Care Unit Stressors"

Code.....

I. Demographic Data:

- Medical diagnosis:.....
- Gender: Male Female
- Age:.....
- Educational Level: Less than year seven Year 7-11
 Finished High School Diploma degree Bachelor degree
- Marital status: Single Married
 Divorced Widow
- Occupation:.....
- Did you admit to CCU through: Emergency department
 Referral from hospital floors Referral from other hospital
- Previous admission to CCU: Yes No
- If yes, how many days did you spend in CCU?
.....
- Have any of your family members admitted to CCU?
 Yes No

II. Stressful events:

Please read the sentences below and choose the most suitable answer for the degree of stress you have experienced in CCU (for the patient):-

No	Item of stress	Extremely stressful	Moderately stressful	Mildly stressful	Not stressful
1	Being restricted by tubes/ lines				
2	Not having the nurse introduce themselves				
3	Having the nurse be in too much of a hurry				
4	Being thirsty				
5	Having your blood pressure taken often				
6	Uncomfortable bed or pillow				
7	Hearing the telephone ring				
8	Frequent physical examination by doctor or nurse				
9	Having strange machines around you				
10	Feeling the nurse are watching the machines closer than they have watching you				
11	Hearing the buzzer sound and alarms from the machinery				
12	Nurse sand doctors talking too loud				
13	Having to wear oxygen				
14	Missing your husband or wife				
15	Not having treatments explained to you				
16	Hearing your heart monitor alarm go off				
17	Having nurse constantly doing things around your bed				
18	Having tubes in your nose or mouth				
19	Not knowing what time it is				
20	Hearing other patients cry out				
21	Having men and women in the same room				
22	Only seeing family and friends for a few minutes each day				

No	Item of stress	Extremely stressful	Moderately stressful	Mildly stressful	Not stressful
23	Being awakened by nurse				
24	Not knowing when to expect things to be done				
25	Unfamiliar and unusual noises				
26	Watching treatments being given to other patients				
27	Having to look at the pattern of tiles on the ceiling				
28	Not being able to sleep				

29	Not being able to move your hands or arms because of intravenous (I.V.) lines				
30	Being aware of unusual smells around you				
31	Having lights on constantly				
32	Being in pain				
33	Seeing intravenous (I.V.) bags over your head				
34	Being stuck with needles				
35	Not knowing where you are				
36	Having nurses use words you can not understand				
37	Not being in control of your self				
38	Not knowing what day it is				
39	Being bored				
40	Having no privacy				
41	Being cared for by unfamiliar doctors				
42	Being in a room which is too hot or cold				
43	Hearing people talking about you				
44	Not being able to communicate				
45	Fear of death				
46	Not knowing the length of stay in CCU				
47	Being unable to fulfil family roles				
48	Financial worries				
49	Fear from AIDS				
50	Being pressurized to consent to treatments				

- Please list the three most stressful items from the list above (by number)

- Any additional items that you feel should be added.

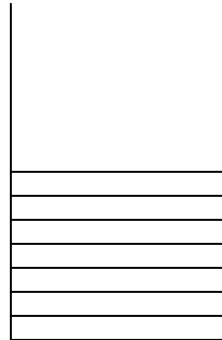
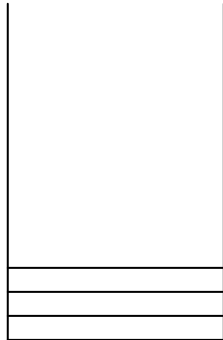
- Any comments you wish to make about patient in CCU.

Not
Stressful

Mildly
Stressful

Moderately
Stressful

Extremely
Stressful



1

2

3

4

APPENDIX J

Questionnaire for Nurses

School of Health Sciences and Social
Care
Brunel University,
Uxbridge,
Middlesex UB8 3PH
Telephone: +44 (0)1895 274000
Web www.brunel.ac.uk

Version 1
11/03/09

"Patients' Experiences of Coronary Care Unit Stressors (Nurses Perspectives)"

Code:.....

1. Socio-Demographic Data:

- Gender: Male Female

- Marital status: Single Married Divorced
 Widow

- Educational level: Diploma degree Bachelor degree
 Others

- Working experience in CCU: -1 year 1-5 years
 6-10 years 10- 15years
 +15 years
 Others

- Working experience in Medical ICU:
 - 6 months () +6 months ()

- Working experience in Surgical ICU:
 - 6 months () +6 months ()

II. Stressful events:

Please read the sentences below and choose the most suitable answer for the degree of stress you think that your patient might experience in CCU regarding these items (for nurses):-

No	Item of stress	Extremely stressful	Moderately stressful	Mildly stressful	Not stressful
1	Being restricted by tubes/ lines				
2	Not having the nurse introduce themselves				
3	Having the nurse be in too much of a hurry				
4	Being thirsty				
5	Having your blood pressure taken often				
6	Uncomfortable bed or pillow				
7	Hearing the telephone ring				
8	Frequent physical examination by doctor or nurse				
9	Having strange machines around you				
10	Feeling the nurse are watching the machines closer than they have watching you				
11	Hearing the buzzer sound and alarms from the machinery				
12	Nurse sand doctors talking too loud				
13	Having to wear oxygen				
14	Missing your husband or wife				
15	Not having treatments explained to you				
16	Hearing your heart monitor alarm go off				
17	Having nurse constantly doing things around your bed				
18	Having tubes in your nose or mouth				
19	Not knowing what time it is				
20	Hearing other patients cry out				
21	Having men and women in the same room				
22	Only seeing family and friends for a few minutes each day.				

No	Item of stress	Extremel y stressful	Moderatel y stressful	Mildly stressful	Not stressful
23	Being awakened by nurse				
24	Not knowing when to expect things to be done				
25	Unfamiliar and unusual noises				
26	Watching treatments being given to other patients				

27	Having to look at the pattern of tiles on the ceiling				
28	Not being able to sleep				
29	Not being able to move your hands or arms because of intravenous (I.V.) lines				
30	Being aware of unusual smells around you				
31	Having lights on constantly				
32	Being in pain.				
33	Seeing intravenous (I.V.) bags over your head				
34	Being stuck with needles				
35	Not knowing where you are				
36	Having nurses use words you can not understand				
37	Not being in control of your self				
38	Not knowing what day it is				
39	Being bored.				
40	Having no privacy				
41	Being cared for by unfamiliar doctors				
42	Being in a room which is too hot or cold				
43	Hearing people talking about you				
44	Not being able to communicate				
45	Fear of death				
46	Not knowing the length of stay in CCU				
47	Being unable to fulfil family roles				
48	Financial worries				
49	Fear from AIDS				
50	Being pressurized to consent to treatments				

- Please list the three most stressful items from the list above (by number)

- Any additional items that you feel should be added.

- Any comments you wish to make about patient in CCU.

Not

Mildly

Moderately

Extremely

Stressful

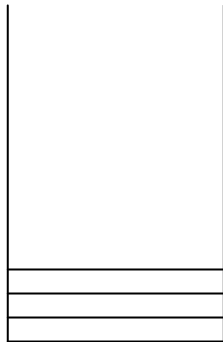
Stressful

Stressful

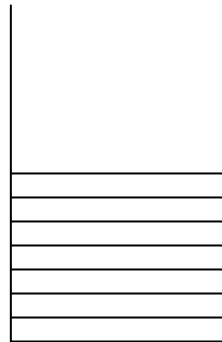
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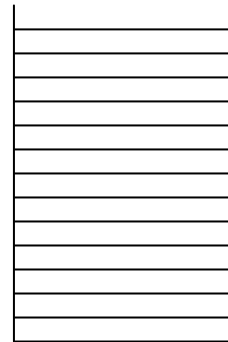
1



2



3



4

APPENDIX K

NICE CLINICAL GUIDELINES 50: JULY 2007