AN EXPLORATION OF CRITICAL CARE NURSES' EXPERIENCE OF

NIGHT SHIFT FATIGUE AND WORKPLACE NAPPING:

BRINGING IT OUT FROM UNDER THE COVERS

by

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DEDICATION PAGE

Nursing is a profession that has offered me the privilege of supporting and sharing life experiences with patients and families. Nursing has also offered me the privilege of working alongside many awe-inspiring, talented nurses. The adjectives that come to mind to describe these nurses are as varied as the nurses themselves; committed, intelligent, dedicated, tenacious, tough, creative, empathetic, altruistic, supportive, and I can't forget, witty and funny. Although nursing offers many rewards, it also offers challenges. At first glance, one might assume that the emotional investment in patients' lives would be the greatest challenge. But for me, that hasn't been so. Rather, the greatest challenge in nursing has been the ability to provide the level of care that my coworkers and I see as necessary for the patient and family within a system that does not always support that care. Not only experiencing but witnessing a healthcare system that constrains and limits committed, highly competent and talented nurses is difficult. It was a desire to make a difference, to change the environment within which my colleagues and I deliver care, became the driving force for me enter graduate studies. One way of impacting change to support nursing care at the bedside is through education and research that not only reflects but acknowledges, validates and honours the experiential wisdom of nurses.

This study examines a 'real life' threat to nurses - fatigue. The nurses from the unit for my thesis recognized the threat of fatigue and had individually and collectively worked to reduce the threat of fatigue. Why? Because of the degree of commitment to providing the best for their patients. Thank-you for allowing me the opportunity to work with you, learn from you, and share your commitment to patient care.

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ABSTRACT

Recently, there has been increasing recognition of the threat of fatigue on safety. Nursing has been slow to recognize this threat. Workplace napping is a fatigue management strategy that is used in some nursing workplaces, although often hidden.

This feminist interpretive phenomenological study explored the lived experience of night shift fatigue and the use of workplace napping among critical care nurses. An understanding of the meaning of night shift fatigue, the concern for safety as embodied by fear, was illuminated by exploring the phenomenological commonalities within the nurses' historical, social and cultural world. Five main themes were identified within this overarching understanding.

There is a need to recognize oppressive constraints, and share the responsibility for managing fatigue among individuals, professions and organizations. In education, practice and research, nurses must be supported through validated evidence-informed strategies to manage what is a normal consequence of shift work, thus leading to enhanced safety for both the patient and nurse.

LIST OF ABBREVIATIONS USED

ACOEM	American College of Occupational and Environmental Medicine
ANA	American Nurses Association
AASM	American Academy of Sleep Medicine
CINAHL	Cumulative Index to Nursing and Allied Health
CNA	Canadian Nurses Association
CRSD	Circadian Rhythm Sleep Disorder
ICSD-2	International Classification of Sleep Disorders
ICU	Intensive Care Unit
IOM	Institute of Medicine
MSICU	Medical-Surgical Intensive Care Unit
NANN	National Association of Neonatal Nurses
PVT	Psychomotor Vigilance Testing
RNAO	Registered Nurses' Association of Ontario
SWD	Shift Work Disorder
TCPS	Tri-Council Policy Statement
WHO	World Health Organization

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I would also like to acknowledge and thank Mary Ellen Gurnham and Deborah Tamlyn for their participation as members of my thesis committee. As my area of study was a broad-reaching, clinically based topic, and involved exploring a covert practice, Mary Ellen and Deborah's support strengthened my courage. It was fundamentally important to the acceptability and success of this study, to have the support of a nursing leader within my organization, and Mary Ellen offered this. Deborah offered a broad based understanding of the sociopolitical context of the nursing world in her contribution to my study.

And lastly but most critical, I wish to acknowledge the support of my family. Over the past three years, each and every phone conversation with my parents included words of encouragement; thank-you Mom and Dad. To my husband and children, thank-you for your patience and for occasionally re-orienting me to the reality of life. The distractions you have provided were just as important to my success as the quiet study and writing times you helped me to protect.

CHAPTER 1 INTRODUCTION

> Fatigue, an orchestra playing out of tune…
>
> *When we force our bodies and brains to stay awake and treat the night as though it is the day, the normal circadian variation … is disrupted; the overall effect is one of disharmony, as though an individual in the orchestra is playing their instrument independently of the others. Instead of a pleasing sound, one hears the cacophonous equivalent of an orchestra tuning up, and the effect is one of noise not music.*
>
> (Croskerry, Cosby, Schenkel & Wears, 2009, p. 260)

Over the past two decades, there has been increasing recognition that patient safety is one of the most pressing issues in healthcare. As the public scrutinizes healthcare, professionals must examine their practice. Recent papers by professional groups such as those released by the Canadian Nurses Association (CNA) and the Registered Nurses' Association of Ontario (RNAO) exploring patient safety and nurse fatigue reflect this trend (CNA & RNAO, 2010; RNAO, 2011). It has been well established that the cognitive, psychomotor and mood disturbances that result from fatigue are associated with serious health and safety risks (Berger & Hobbs, 2006; Caldwell et al., 2009; Caruso & Hitchcock, 2010; Costa, 2010; Flin, Winter, Sarac & Raduma, 2009; Ker, Edwards, Roberts, Blackhall & Felix, 2009; Lerman et al., 2012; Rogers, 2008). The American College of Occupational and Environmental Medicine (ACOEM) Presidential Task on Fatigue Risk Management identifies fatigue as an unsafe workplace condition, and warns that neglecting its interrelationship with health, safety, and productivity results in negative outcomes (Lerman et al., 2012).

1.1 IDENTIFYING THE PROBLEM

There are a multitude of causes of nurse fatigue, but one of the most prevalent factors is circadian rhythm disruption and sleep debt related to shift work (Lerman et al., 2012; Smith-Coggins et al., 2006). The threat of fatigue is reflected in the World Health Organization (WHO) review of human factors in patient safety. Their definition of fatigue is adopted from the aviation industry and focuses on the causes of fatigue, describing it as a "state of tiredness that is associated with long hours of work, prolonged periods without sleep, or requirements to work at times that are 'out of synch' with the body's biological or circadian rhythm" (Flin et al., 2009, p. 42). Shift work, defined as non-standard work hours including night work, early morning work, and rotating schedules, was performed by 51.4 % of Canadian registered nurses and 58.6 % of Nova Scotia registered nurses in a 2005 survey (Statistics Canada, Health Canada & Canadian Institute for Health Information). Beyond the expected fatigue, and the physiological and psychological ramifications of shift work, nurses are at high risk for developing a circadian rhythm sleep disorder (CRSD), known as shift work disorder (SWD). SWD is a condition identified by the American Academy of Sleep Medicine (2005) International Classification of Sleep Disorders classification system (ICSD-2 307.45-1). SWD is associated with excessive sleepiness or insomnia for one month or longer while doing shift work (Culpepper, 2010). The rate of SWD is largely unexplored, as it has been clinically under-recognized and the formal diagnosis infrequently used (Culpepper, 2010; Sack et al., 2007). However, a recent large study of nurses in Norway estimated the prevalence of SWD at nearly 40 percent (Flo et al., 2012). Most notable for nurses working shift work though, is that with or without the formal diagnosis of SWD, there is

an inevitable high degree of sleep deprivation and fatigue associated with all shift work, and the full impact is underappreciated.

The expanding field of science related to circadian rhythm and the application to clinical practice prompted the American Academy of Sleep Medicine to appoint a panel of experts to review the evidence, examining 2084 articles to provide evidence-based recommendations for clinical practice. Workplace napping was the therapy most strongly recommended by the task force to mitigate the negative effects of shift work, with the highest level of supporting evidence. Therapies with a moderate level of evidence for use included timed light exposure or melatonin administration, alerting agents or hypnotics. The use of stimulants such as caffeine was evaluated as an option therapy with inconclusive or conflicting evidence (Morgenthaler et al., 2007). I have worked in some clinical areas that have informally adopted the practice of workplace napping on night shift, and others that have not. Many coworkers and I have noted benefits of less fatigue, safer nursing care and safer drives home. However napping has not been widely adopted by nursing and is a subject that is not openly discussed.

1.2 LOCATING MYSELF IN THE RESEARCH

As a bedside nurse with over twenty years of clinical experience, I have been immersed in the empirical worlds of critical care and cardiology, with the positivist and post-positivist paradigms being the dominant foundation for evidence-based practice. Quantitative methods are used to seek objective, generalizable explanations. However, my nursing care is guided by much more than knowledge originating from the biomedical model (Fulbrook, 2003). I concur with nursing theorist Carper, in that my caring is informed not only by empirical knowledge, but also by ethical, personal and aesthetic

knowledge derived from the humanities, clinical experience and societal values (Carper, 1978). I support that nursing care is also based on what some would present as the fifth pattern of knowing, the understanding of the sociopolitical context, which looks more broadly at the context in which healthcare occurs (White, 1995). Empirical knowledge provides nourishing deep roots but my personal, ethical, aesthetic, and sociopolitical knowing, provide the leaves and blossoms to support the fruits of my nursing care. The fruits of my care are the experiences of my patients. A holistic focus on their experiences is synonymous with an interpretive worldview; the relationship with my patient is fostered, and understanding the meaning ascribed to their experience is central. The positivist and post-positivist paradigms provide a very fundamental part of my nursing knowledge. But it is my ability to apply an interpretive lens to provide holistic care that supports the patient's experience, as well as my own.

My career has given me the opportunity to work with many skilled nurses. Over the years, I have seen talented nurses unable to have their voices heard when a decision is made that they feel negatively impacts patient care. Many times I have asked myself, how can such a large group of knowledgeable experienced nurses be ignored? This led me to examine the context in which we deliver care and question, what is it within our sociopolitical context that limits the potential of these nurses?

I began my exploration of the topic of night shift fatigue many years ago with my own shift work experience. As I spent those first years working shift work, I assumed that the negative sequelae of night shift were unavoidable. I tried many measures to improve my level of alertness, to help me provide the safest care. But the circadian disruption, sleep deprivation and subsequent fatigue were pervasive, and I saw the effects over and over in myself and those around me. Other than a nurse occasionally nodding off in the

middle of a more menial task or quiet moment, the notion of a workplace nap had never occurred to me.

This changed when I moved to a new work setting. In this new unit, on a night shift when workload would allow, the nurses took one longer break during the twelve hour shift, and closed their eyes in a dark, quiet spot to nap. I would lie in a dark locker room on a lumpy old cot and try to rest. My mind would race in the nursing mode, thinking of things I needed to do on return to the bedside, even though a very capable nurse was attentively caring for my patient. Many nights I forced myself to lie quietly to not disturb my co-worker sharing the room, while convinced I would never rest. Over time though, I began to notice that I was more alert for the remainder of the shift and on my drive home in the morning. As I gained more experience in this environment with nurses that valued the use of workplace napping, I became more intrigued; why weren't nurses and healthcare organizations jumping to adopt policies to support workplace napping? What are the implications of not adopting a mechanism strongly supported by research? Finally, given the emphasis on fatigue management within the aeronautical and transportation industries and the associated research, why has there been little research focused on this concern within nursing?

1.3 SUMMARY

There have been a number of catastrophes associated with human error related to fatigue; for example, the Three Mile Island and Chernobyl nuclear catastrophes, the space shuttle Challenger explosion and the Exxon Valdez environmental disaster (Ker et al., 2009; Surani & Murphy, 2007). The negative effects of fatigue and the use of workplace napping have been largely studied quantitatively in male-dominated transportation

industries such as aviation and long-haul trucking. Arguably results are relevant to healthcare as a similar degree of cognitive and psychomotor vigilance is essential, particularly in high acuity critical care settings. Curious, in an era of increased emphasis on patient safety, workplace napping has not been eagerly embraced by nursing and healthcare organizations as a cornerstone strategy to counter fatigue and potentially improve patient and healthcare professional safety. There is a chasm in our understanding of the nursing experience of night shift fatigue and the use of workplace napping. Whether this may be attributable to the gendered nature of nursing work, or the sociopolitical climate of healthcare, including organizational values and beliefs around napping, remains to be determined.

1.4 RESEARCH PURPOSE AND QUESTIONS

The purpose of this study was to explore the experience of night shift fatigue and workplace napping among a group of critical care nurses working in a tertiary hospital. It focused on perceptions and meaning critical care nurses gave to the experience of night shift fatigue as well as how napping affected their ability to provide care, and ensure patient and nurse safety. The study sought answers to the following questions:

1. What are critical care nurses' experiences of night shift fatigue and workplace napping?

2. What meaning do critical care nurses give to night shift fatigue and workplace napping?

3. What factors do critical care nurses perceive as supporting or challenging the use of workplace napping?

4. What are critical care nurses' perceptions of how night shift fatigue and workplace napping impacts patient care?

5. What are critical care nurses' perceptions of how night shift fatigue and workplace napping impacts the safety of nurses?

CHAPTER 2   LITERATURE REVIEW

A literature review was conducted using a variety of search strategies, including the use of online databases (CINAHL and Pub Med). A wide scope of search terms were used including "fatigue", "nap", "shift work", "shift work disorder", "safety" and "nursing". The search was limited to English publications from 1995 to present. The grey literature was also explored. The bulk of the evidence was quantitative in nature and from outside of the healthcare context. There were a limited number of qualitative studies identified. Overall, few studies examined the use of workplace napping to counter fatigue in nursing, although the limited number of published studies appeared to stimulate several editorial commentaries.

2.1 FATIGUE AND SAFETY

In 1999, the United States Institute of Medicine (IOM) released a landmark study that brought patient safety into the public domain (Kohn, Corrigan & Donaldson, 1999). This was followed in 2001 by a seminal Canadian study which examined patient safety by highlighting medical error (Baker & Norton). Around the globe, the issue of patient safety and medical error has gained prominence. Safety has been normalized as part of corporate cultures, both within and outside of healthcare (Storch, 2005). In industries with a low tolerance for errors associated with grave consequences, fatigue is an important issue.

The 2010 report by the Canadian Nurses Association and Registered Nurses' Association of Ontario, *Nurse Fatigue and Patient Safety,* acknowledged the threat fatigue poses to patient safety. The definition provided for fatigue used in the CNA/RNAO study was based on their review of the literature and their survey of the nurses' experience. Although fatigue is generally defined within the context of the

discipline exploring it, the definition provided by the CNA and RNAO is in keeping with that provided by the WHO and the ACOEM (Flin et al., 2009; Lerman et al., 2012). It demonstrates the pervasiveness of fatigue and how it is much more than being 'tired". Fatigue is defined as:

> … a subjective feeling of tiredness (experienced by nurses) that is physically and mentally penetrative. It ranges from tiredness to exhaustion, creating an unrelenting overall condition that interferes with individuals' physical and cognitive ability to function to their normal capacity. It is multidimensional in both its causes and manifestations; it is influenced by many factors: physiological (e.g., circadian rhythms), psychological (e.g., stress, alertness, sleepiness), behavioural (e.g., pattern of work, sleep habits) and environmental (e.g., work demand). Its experience involves some combination of features: physical (e.g., sleepiness) and psychological (e.g., compassion fatigue, emotional exhaustion). It may significantly interfere with functioning and may persist despite periods of rest. (CNA & RNAO, 2010, p. 1)

The twenty-four hour nature of healthcare leads to the necessity of shift work. Since the 1960's, there has been a growing understanding of circadian rhythm biology including the consequences of sleep deprivation and cumulative sleep loss and the benefits of sleep to facilitate cognitive and physical recovery. Night shift work disrupts the bodies' circadian rhythm. During the night melatonin is released to induce sleep while cortisol is released in the morning to stimulate. As a result nurses may experience the cumulative effect of two types of sleep deprivation, a one-two punch. The first punch is the result of being awake at night rather than asleep. The second occurs cumulatively from nurses getting shortened, less restorative sleep during the day from repeated night

shifts (Muecke, 2005). A sleep debt as little as one hour per night can result in altered

concentration, reduced problem solving, and slower reaction times, with blunting of

cognitive and social responsiveness (Dean, Scott & Rogers, 2006). Night shift has been

linked to an increase in workplace accidents, with workers three times more likely to be

injured than dayshift workers (Swaen, van Amelsvoort, Bultmann & Kant, 2003) As little

as working one night shift, resulting in being awake for 24 hours can impair

neurobehavioral performance comparable to a blood alcohol level of 0.10 % (Dawson &

Reid, 1997). It would be a criminal offence in Nova Scotia to operate a motor vehicle

with such a significant blood alcohol level (Government of Nova Scotia, 2012).

The sequelae of fatigue can be categorized into physiologic, neuropsychologic and

safety effects (see Table 1). Fatigued employees are at increased risk for physiological

impairments such as cardiovascular disease, immune suppression, adverse reproductive

outcomes, cancers, and gastrointestinal and metabolic disturbances (Banks & Dinges,

2007; Barger et al., 2005; Berger & Hobbs, 2006; Bøggild & Knutsson, 1999; Culpepper,

2010; Lerman et al., 2012; Muecke, 2005; Rogers, 2008; Pallesen et al., 2010; Scott,

Hofmeister, Rogness & Rogers, 2010a; Van Dongen, Maislin, Mullington, & Dinges,

2003). Neuropsychological impairments include short-term memory and attention

deficits, depression and irritability, a loss of awareness in critical situations, and an

increased rate of divorce and substance abuse (Banks & Dinges, 2007; Berger & Hobbs,

2006; Culpepper, 2010; Lerman et al., 2012; Pallesen et al., 2010; Rogers, 2008; Scott et

al., 2010a; Van Dongen et al., 2003). Safety effects include personal safety concerns such

as increased risk of sharps-related incidents and automobile accidents, as well as patient

safety threats. Patient safety concerns associated with fatigue included medication errors,

near-misses, and the failure to recognize or misinterpret clinical findings (Agency for

Healthcare Research and Quality, 2000; Arnedt, Owens, Crouch, Stahl & Carskadon, 2005; Banks & Dinges, 2007; Berger & Hobbs, 2006; Culpepper, 2010; Dawson & Reid, 1997; Deans, 2005; Flin et al., 2009; Lamond & Dawson, 1999; Lee et al., 2003; Lerman et al., 2012; Mayo & Duncan, 2004; Pallesen et al.,, 2010; Rogers, 2008; Scott et al., 2010a; Steele, Ma, Watson, Thomas & Muelleman, 1999).

Table 1: The Effects of Fatigue

Physiologic Effects	
▪ gastrointestinal issues (flatulence, peptic ulcers, irritable bowel syndrome, constipation, diarrhea) ▪ decreased respiratory muscle endurance ▪ depresses respiratory drive response to hypercapnia & hypoxia ▪ impaired immune response (increase tumor necrosis factor & interleukin 6) ▪ metabolic disturbances (insulin resistance, obesity, increased triglycerides & total cholesterol) ▪ reduced serum iron levels	▪ adverse reproductive outcomes (irregular menstruation, reduced fertility & problems during pregnancy) ▪ increased rates of breast, prostate, endometrial, non-Hodgkin lymphoma & colorectal cancer ▪ sleep disorders including restless legs syndrome ▪ microsleeps during work tasks ▪ potentially increased risk for cardiovascular disease, hypertension
Neuropsychologic Effects	
▪ cumulative dose-dependent deficits in all cognitive performance tasks ▪ diminished short-term memory & attention ▪ impaired motor skills & cognitive processing ▪ impaired mental status associated with depression, irritability and anxiety	▪ higher rates of divorce & abuse ▪ impaired ability to assess own level of alertness ▪ exacerbate existing mood disorders ▪ higher levels of anxiety & irritability ▪ decreased report quality of life
Personal Safety Effects	
▪ absence of sleep for 24 hours impairs psychomotor performance to blood alcohol level of 0.10% ▪ increased likelihood of car accident when coming off night shift	▪ drowsy driver has slower reaction times, reduced vigilance & impaired information processing ▪ increased consumption of alcohol and caffeine and smoking
Healthcare Work Safety Effects	
▪ failure to recognize or misinterpret clinical findings ▪ mishandling of sharp or hazardous objects ▪ misdiagnosis	▪ neglect to implement warranted interventions ▪ inadequate infection control ▪ increased incidence of near-misses ▪ administered wrong drug or dose

2.2 THE CRITICAL CARE SETTING AND SAFETY

The high acuity, critical care setting adds to concerns for patient safety (Lee et al., 2003; Muecke, 2005). These critically ill patients have the most complex medical problems and limited physiological reserve to compensate for errors (Kiekkas et al., 2011; Louie et al., 2010; Moyen, Camire & Stelfox, 2008; Rothschild et al., 2005). They are in the critical care setting because they need specialized care. This care requires a high degree of critical thinking to make decisions often with incomplete data. Furthermore, these situations require the performance of advanced psychomotor skills, vigilance and the ability to respond swiftly to subtle changes 24 hours a day while working in partnership with physicians with varying levels of critical care expertise (Fallis, McMillan & Edwards, 2011; Rothschild et al., 2005; Scott, Rogers, Hwang & Zhang, 2006). In the critical care setting, the "amount of cognitive information needed to reach a correct decision is high and often exceeds the upper limit of information that can be held in the conscious memory" (Kiekkas, Karga, Lemonidou, Aretha & Karanikolas, 2011, p. 37). Taken together, the risk of human error is of grave concern.

Estimates of errors in critical care vary widely, even within individual countries. Error does not have a standardized definition, and introducing an even larger variable is measurement variation. One paper reports that 65.6% of errors can be detected by skilled direct observation, but only 3.7% can be found by chart review and 0.2% through self-reporting (Kiekkas et al., 2011). There is no standard method of measuring errors in Canadian critical care areas (Louie, 2010). Although all error data must be considered individually within the context of how the study was conducted, the trend remains; an alarming number of errors occur with a staggering human and societal burden. One study estimates that of the five million patients in the United States admitted to critical care

units in a year, all could experience at least one preventable adverse event (Berenholtz, Dorman & Pronovost, 2003). Looking at medication errors alone, the rate of preventable events in critical care is estimated at nearly twice that in non-critical care settings (Cullen et al., 1997). Approximately one fifth of medication errors in critical care are considered life-threatening and almost half are serious enough to warrant additional life-sustaining therapy (Tissot et al., 1999). The sicker the patient is, the greater the risk of errors (Kiekkas et al., 2011; Moyen, Camire & Stelfox, 2008).

2.3 NAPPING AS A FATIGUE COUNTERMEASURE: QUANTITATIVE EVIDENCE

Fatigue and safety are complex processes, not lending themselves to simplistic measurement. Rigorous quantitative studies use a combination of valid and reliable tools to measure fatigue and critical task safety (Driskell & Mullen, 2005; Morgenthaler et al., 2007). Sleep logs or diaries are often used, as recommended in the ICSD-2 (American Academy of Sleep Medicine, 2005; Morgenthaler et al., 2007). Polysomnography allows the study of the biophysical process of sleep, including brain activity, eye movement, skeletal muscle activity and heart rhythm. It is an advanced tool, used in a limited number of field studies. Although helpful to identify a multitude of sleep disorders, it is not routinely used in the study of circadian rhythm sleep disorders (Morgenthaler et al., 2007). More frequently, an actigraph wrist activity monitor is used in research, as well in the clinical evaluation of circadian rhythm sleep disorders. It provides information about sleep-wake patterns and sleep quality, and correlates well with polysomnographic data (Morgenthaler et al., 2007). Psychomotor vigilance task (PVT) testing is a well-validated test of visual reaction time to assess sustained attention that has been demonstrated to reflect sleep loss and circadian disruption effects (Smith-Coggins et al., 2006). A number

of standardized questionnaires are also routinely used; for example, the Pittsburg Sleep Quality Index and the Epworth or Karolinska Sleepiness Scale (Scott, Hofmeister, Rogness & Rogers, 2010a; Smith-Coggins et al., 2006).

Early studies of fatigue and circadian rhythm disturbances were done in the laboratory setting. In more recent years, there has been an increase in field studies exploring sleep deprivation and its effects on workers personally and their job performance. The aeronautical industry has been a leader in studying and implementing fatigue countermeasures. In 1994, the National Aeronautics and Space Administration teamed with the Federal Aviation Administration to complete a seminal study of the use of in-flight napping in airline pilots (Rosekind et al.). The findings demonstrated an improvement in physiological alertness and performance achieved by a 40 minute nap. The strength of this and similar studies has led many international airlines, such as Air Canada and British Airways, to authorize the use of in-flight napping for pilots as a risk management strategy (Caldwell et al., 2009). Aeronautical studies are relevant to healthcare, particularly critical care, as both require a high degree of cognitive and psychomotor vigilance. Recently, there has been more interest in the examination of napping in healthcare, particularly in relation to the clinical performance of medical residents.

In 2005, a meta-analysis of the efficacy of naps as a countermeasure to fatigue was completed by Driskell and Mullen. All available studies were examined to determine if they met the pre-established criteria of rigour, and contained data that allowed statistical tests to determine the effect of naps on fatigue and performance. Twelve studies met the criteria for inclusion, giving a total of 178 tests for examination. The results indicated that naps can reduce the effects of sleep loss, with positive effects on both

performance and fatigue. The authors stress that "fatigue is a complex and multifaceted subject that requires complex and multifaceted solutions", and that naps are "an effective countermeasure" (Driskell & Mullen, 2005, p. 376).

Examining the current literature to assess the evidence for the use of workplace napping, six quantitative studies were selected for more in-depth examination, based on their relevance to the focus of this current inquiry.

A 2009 study by Signal, Gander, Anderson and Brash used a repeated measures design to examine the efficacy of a 40 minute nap versus no nap, for male and female air traffic controllers. Testing of alertness and performance was done using psychomotor vigilance task testing, neurophysiological recordings and a subjective visual scale, with improved alertness and critical task safety found in the nap group. A similar airline industry study by Purnell, Feyer & Herbison (2002) used a crossover design to compare a 20 minute nap opportunity mid night shift to no nap in a group of 24 aircraft maintenance engineers. Measurement included questionnaires, actigraphy, sleep diaries and a performance test battery, and found improved vigilance and accuracy in psychomotor testing and improved vigilance during the morning drive home, in the nap group.

Smith-Coggins et al. (2006) did a randomized controlled trial involving 49 doctors and nurses in a trauma unit. Participants were randomly assigned to a nap or no nap group. The study looked at many variables including performance and alertness using psychomotor vigilance task testing, a recall memory task, intravenous insertion, driving simulation, visual face assessment, and a sleepiness and mood scale. The nap group showed less fatigue and improved psychomotor vigilance at the end of the shift. The Smith, Kilby, Jorgenesen and Douglas (2007) study of nine nurses and medical scientists used a randomized cross-over intervention of a 30 minute nap versus no nap, and also

demonstrated improvements in psychomotor vigilance in the nap group. A within-subject paired crossover study by Arora et al. (2006) involved 38 medical residents who incorporated a nap or no nap, into their on-call schedule. Fatigue was measured with a sleepiness scale, actiwatch activity monitor and interviews. Findings showed that residents who napped had less overall and post-call fatigue. This study had a large sample but participation was inconsistent, as the subjects tended not to participate during periods of increased workload and burn-out, when the effect of naps might have been accentuated. This study did not use psychomotor testing.

Scott, Hofmeister, Rogness and Rogers (2010a) used a pretest/posttest intervention repeated measures study design with 62 nurses. The intervention used a program of fatigue countermeasures, with an emphasis on naps. The post intervention measurements showed improved alertness and error prevention. This was the only study that included self-reporting of errors by nurses. The other studies used psychomotor testing to measure alertness and psychomotor skill, but did not collect data directly on workplace errors.

Two of these six studies described were done in the aeronautical industry, and the remainder in healthcare. Although the populations are different, they have comparable performance and safety requirements. The samples were all convenience samples. One study had only 9 participants, however this small sample size is standard in occupational nap research, with study samples ranging from 8 to 25 participants (Smith et al., 2007). The objective for five of the studies was similar, the effect of napping on fatigue. The objective of the sixth was the effect of a fatigue countermeasures program with an emphasis on napping, on fatigue and patient safety. The measurement tools were

validated and recommended measurement tools for sleep studies (Driskell & Mullen, 2005; Morgenthaler et al., 2007; Sack et al., 2007).

Overall, the quantitative evidence supports the use of workplace napping on night shift to counter fatigue, resulting in improved critical task safety as indicated by improved psychomotor vigilance. Indicators for psychomotor vigilance are reliable and valid measures of critical task safety, but have not been generally used in nursing. Arguably, they may be more accurate than traditional measures of safety, for example, self-reporting of medication errors (Kiekkas et al., 2011). A more appropriate approach may be a combination of the accepted measures of critical task safety along with information that reflects the nursing context, such as direct observation error, near-miss or failure to rescue data. Although multiple studies indicate that napping is an effective measure, there are very few implementation studies in nursing. As well, although there is robust evidence to support the use of workplace napping, there are variations in the recommendations for ideal nap length and how to best address post-nap sleep inertia.

2.4 NAPPING AS A FATIGUE COUNTERMEASURE: QUALITATIVE EVIDENCE

Qualitative studies exploring the use of workplace napping are uncommon. Seven studies were found and selected to explore in more depth. Five of the seven studies examine fatigue in nursing and two in medical residents. The studies were published in a variety of journals including nursing, medical, occupational health and sleep journals.

A 2004 study of 149 medical residents by Papp et al. was a multi-institutional mixed method study. The qualitative aspect of the study involved focus groups with semi-structured discussions examining sleep loss and fatigue. The transcripts were analyzed following a grounded theory tradition to develop a conceptual model of night shift

fatigue. Negative effects were coded into three categories; learning and cognition, job performance, and personal life. Residents found that fatigue had a major negative impact on their personal lives as well as their ability to work. Concerns about job performance included the effects on their professionalism (interactions with staff, objectification of patients, loss of empathy), and on their cognitive processes and ability to perform tasks (medical errors, misdiagnoses, diminished motor skills). The results reflected that the residents sacrificed their health and personal needs to maintain job performance. The authors cautioned that the socialization process of medical residency can be the basis for a lifetime of attitudes.

Gallew and Mu (2004) did an interpretive phenomenological study examining the lived experiences of perinatal night shift nurses. Night shift work was examined by looking at occupational patterns that comprise the lives of human beings. There was an emphasis on the challenges women face fulfilling multiple roles while working shift work. Four themes were identified. Two themes related to the lived experience of working night shifts; "Living by night, sleeping by day: The masquerade", and "Relationships and family lives: A kaleidoscope" (Gallew & Mu, 2004, p. 25). The third and fourth themes related to the adaptive strategies used by the participants; "A 'just do it" attitude", and "Occupational strategies for sleep" (Gallew & Mu, 2004, p. 26). Gallew and Mu identified that the temporal nature of the work resulted in disruption of home, family and personal roles, and these disruptions outweighed concerns related to work performance. They discussed participants' feelings of guilt as they struggled to balance sleep, home, family and personal roles. The balancing may be further complicated by society's expectations of women's perceived roles as nurturer and caregiver. Of note was

that the researchers discussed coping with night shift as a personal responsibility; there was no reflection of the responsibility of the employer.

A descriptive study by Novak and Auvil-Novak (1996) used focus group discussions to explore night shift challenges experienced by 45 critical care nurses. This study was unique in that the nurses did not identify shift work as affecting their job performance or patient care negatively. However, they did identify difficulty remaining awake between three and five a.m., which I would suggest contradicts satisfactory job performance. I question why nurses felt the effects of fatigue did not affect their ability to provide care. Perhaps there were perceived organizational and sociocultural barriers to discussing the impact of fatigue such as the intertwined impact of the expectations of nurses and of professionals to be able to provide exemplary care regardless of what may be viewed as a personal weakness, fatigue (CNA & RNAO, 2010; Owens, 2007; Street, 1995). Novak and Auvil-Novak identify their most significant finding as the high incidence of automobile accidents and near-misses related to shift work. Three of the qualitative studies examined discussed concerns for post-shift car accidents and near-misses (Novak & Auvil-Novak, 1996; Papp et al., 2004; Stoller, Papp, Aidens, Erokwu & Strohl, 2005).

Four of the studies discussed the benefits of night shift napping in relation to feelings of fatigue and perceived ability to perform (Fallis, McMillan & Edwards, 2010; Scott, Hofmeister, Rogness & Rogers, 2010b; Silva-Costa, Araujo, Nagai & Fisher, 2010; Stoller et al., 2005). The study by Stoller, Papp, Aidens, Erokwu and Strohl (2005) built on the earlier research by Papp et al. (2004). They used the focus group transcripts collected in the earlier study, and analyzed the text following a grounded theory tradition to explore countermeasures used by the 149 medical residents. The categories identified a

wide range of strategies including chemical, dietary, activity, and sleep management, behavioural and cognitive approaches. Napping was discussed in 20 of the 22 focus groups and was found beneficial by the majority. The less favorable responses to napping included feeling 'blurry' post-nap, which may reflect a lack of awareness of sleep inertia. This study also highlighted the residents' concerns about staying awake while driving. One of the primary suggestions made by the researchers was the need to educate residents about how to manage sleep loss and fatigue, given the residents' trial and error approach to manage fatigue. Many of the participants indicated that they were aware of the negative effects of their current fatigue countermeasures. Researchers did not explore why they persisted with unhealthy practices; however, they did present a couple of explanations. They suggested that residents may see few healthy opportunities to manage fatigue in their work setting and within a cultural context that sees fatigue as a weakness. Fatigue is often seen as a time-honored part of residency.

The Brazilian study by Silva-Costa, Araujo, Nagai and Fisher (2010) examined the importance of napping on night shift, and the environmental and organizational conditions needed. The researchers used semi-structured interviews to identify central ideas and reflect the social representations of the group. The results for the 20 nurse participants found napping important for rest, alertness, reduced fatigue and risk of errors. It was noted that the opportunity to nap depended on workload, despite having managements' permission to nap. The authors identified this notion of permission to nap as a persistent controversial issue in their study as well as in the extant literature on fatigue. They also suggested that the physical environment was not conducive to napping, although nurses still found napping to be important to maintain alertness.

The study by Scott, Hofmeister, Rogness and Rogers (2010b) was part of a larger study of a fatigue countermeasures program for nurses (FCMPN), with an emphasis on napping. They used focus groups involving nurses and nurse managers to examine the benefits and challenges of the FCMPN. Napping was found to be helpful to fight fatigue. The results were positive for the program in general, but there were differing views about the ease of implementing the program. The nurses identified feeling conflicted about taking time to rest due to workload and staffing. The managers did not perceive a shortage of staff that would prohibit taking a break, and identified that within the culture of nursing, work breaks are not a priority.

In a recent Canadian study, researchers identified that although napping is an effective strategy to "improve performance, reduce fatigue, and increase vigilance", there has been little nursing research into its use (Fallis, McMillan & Edwards, 2010, p. e1). This qualitative descriptive study used semi-structured interviews with 13 emergency room and intensive care nurses to help understand napping on night shift. The nurses described experiences of improved mood, energy and response times, with less favorable responses related to post-nap sleep inertia. The study identified factors related to the use of napping, such as the demands of patient care and staffing, and organizational and environmental barriers like the lack of comfortable places to rest, and a concern of about the perceptions of management and the public. The authors have a study pending publication which examines the perceptions of critical care managers about workplace napping (M. Edwards, personal communication, April 16, 2013).

Interestingly, two studies that examined coping strategies did not discuss the use of workplace napping at all. In the study by Gallew and Mu (2004), the shift work adaptive themes identified by the 11 nurses at two affiliated hospitals were focused on

how to function outside of work, with limited information on at-work strategies. The Novak and Auvil-Novak (1996) study involving 45 critical care nurses from one hospital gave an overview of coping strategies however did not discuss napping. As napping is a well-established strategy, it leads one to question why. I would suggest that perhaps these samples of nurses never had an opportunity to experience workplace napping, or that the workplace culture did not support its use. Some hospitals do have policies that would support the termination of an employee for napping (Scott et al., 2010a).

Another important commonality that surfaced in the review of the qualitative research was the notion that dealing with fatigue was a personal, rather than a professional responsibility. For the most part, the literature focused primarily on the individual's experiences of fatigue. Several studies highlighted how residents and nurses were left to manage fatigue on their own, identifying the lack of shift work education provided in their professional education or in the workplace (Novak & Auvil-Novak, 1996; Papp et al., 2004; Stoller et al., 2005). Fatigue is a "given" with the job, and there are few alternatives as reflected in the "just do it" attitude of nurses (Gallew & Mu, 2004, p.26) and the "powering through" attitude of residents (Stoller et al., 2005, p.7).

In the study by Stoller et al. (2005), the authors identified how varied the strategies used to manage fatigue were. They described residents using a trial-and-error approach to finding strategies rather than an evidence-based approach. The investigators also identified that residents did not share strategies with each other, nor did they seek advice from experienced physicians. They identified that some participants felt the culture in which they worked viewed fatigue as a sign of weakness. These findings would suggest there is a need for future study, such as this study, to illuminate the experience of

night shift fatigue and possibly provide insight into the mix of responsibility for fatigue management in our healthcare professions and organizations.

2.5 ORGANIZATIONAL CONTEXT

Fatigue has been well established as an unsafe workplace condition leading to many industries having taken action to mitigate the negative effects, in light of findings that highlight "well-rested, alert employees are critical to safe and productive operations" (Lerman et al., 2012, p.231). There are multiple examples of industries that have safety management systems that actively address fatigue and have developed fatigue risk management systems (FRMS), using systematic, scientific-based programs and policies to improve outcomes, going beyond duty-rest or hours-of-service regulations. The aviation and road transport industries in Australia and New Zealand were the first to formally implement FRMS. This movement initially spread throughout the aviation, railroad and transportation industries in Europe and the United States. From this basis, FRMS are being established in the mining, pipeline and petrochemical and refining industries (Lerman et al., 2012).

Despite the risk of fatigue in the healthcare system, it has been slow to formally address fatigue (Lerman et al., 2012). Nationally, documents such as those published by the Canadian Nurses Association and the Registered Nurses' Association of Ontario offer advice to organizations to help mitigate the negative effects of fatigue (CNA & RNAO, 2010; RNAO, 2011). The Quality Worklife - Quality Healthcare Collaborative involved the partnering of ten national healthcare organizations to develop a pan-Canadian action plan using evidence-based strategies to foster a healthy workplace. This action strategy includes as a priority action the implementation of fatigue management programs within

our organizations (Canadian Council on Health Services Accreditation, 2007). Locally, Capital Health is the largest tertiary care hospital in Atlantic Canada. There is a Wellness and Respectful Workplace initiative in effect, designed to address health issues in the workplace. As well, there is a Safety and Injury Prevention program. However, at the time of this study, no formal fatigue management program within the organization had been implemented (Capital Health, 2006).

2.6 NURSING, THE HOSPITAL SETTING AND THE USE OF NAPPING AS A FATIGUE COUNTERMEASURE

As a predominantly female discipline, modern nursing has evolved in relation to the predominantly male discipline of medicine. Historically, women healers were autonomous and held a central societal role. Around the time of the Industrial Revolution, the role of nursing changed to that of medicine's handmaiden with nursing controlled by the male worlds of medicine and hospital administrators (Adams & Bourgeault, 2003; Doering, 1992; Roberts, 1983). Nurses tended to come from a lower socioeconomic class than physicians (Doering, 1992). They were educated in largely free-labour apprenticeships in hospitals. In the early 20th century, when physicians were being educated in universities, the medical community opposed changes to nurses' "training". Nurses remained in the hospital setting, and scientific knowledge remained in the medical domain. The role of women was that of nurturer and mother, and nursing was an extension of this. Today nurses remain, in many ways, a product of their history despite the introduction of formal university level education, an emphasis on evidence-informed practice and legislation granting registered nurses greater autonomy within their practice. Along with the historical gender imbalances of medicine and nursing, there remains a disparity in education level and income (Doering, 1992). Most present day hospitals are

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still structured with the physician, a traditionally male and patriarchal position, as the head of a predominantly female team, in a position of hierarchical observation and power. This hierarchical structure tends to flourish in hospital management structures as well (Doering, 1992; Roberts, 1983). Although more and more women are entering the medical profession and men are slowly making their way into nursing, to ignore the continued impact of our history on our present day reality would be naïve, and must be considered when examining the sociopolitical environment of hospital nursing.

Many industries and professions have developed programs to mitigate the negative effects of fatigue, but despite the costly risk of errors, healthcare lags behind (Rogers, 2008). Workplace napping has been largely studied and implemented in male-dominated professions such as the aviation, aeronautical and long-haul trucking industries. The level of evidence for the use of napping as a fatigue countermeasure is high, with findings that are relevant and have the potential to benefit patient safety and nurses' personal health. However, the literature and personal experience would indicate that workplace napping is infrequently implemented in nursing, and it is not a practice that is openly acknowledged. Examining the qualitative literature to learn why nursing has been slow to explore the use of workplace napping, provides some clues. An overall commonality found in the literature seems to be this; nursing tends to view fatigue as a personal responsibility with sleep sacrificed to maintain professional and personal obligations. Could the practice of nurses not taking rest breaks or naps when able, be engrained within the context in which nurses work? Is this tendency to sacrifice sleep related to the history of nursing as a predominantly female profession? If a counter-fatigue measure such as workplace napping has been demonstrated to be effective in other arguably comparable professions to improve safety, why is there little discussion of the

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practice in nursing? Does the sociopolitical context in which nurses' work, impede its use? I propose that these questions may be of interest to nurses and women, and that these problems may be embedded in nursing history, and interwoven within the power tensions of an androcentric healthcare system.

2.7 SUMMARY

The effects of fatigue on safety have been well established. Recently, the threat posed by fatigue to both patients and caregivers has been acknowledged by national and provincial professional nursing bodies. The sequela of fatigue is even more concerning in the high acuity critical care setting. The review of the literature would indicate that there is strength in the quantitative evidence that napping on night shift can help counter fatigue and result in improved critical task safety as indicated by improved psychomotor vigilance. There are areas for further examination, including exploring indicators of psychomotor vigilance in nursing. As well, although a number of studies indicate that napping is an effective measure, there are few implementation studies in nursing. The qualitative studies contribute a rich picture of night shift fatigue, and lead to questions about why nursing views fatigue as a personal responsibility. Exploring the literature, combined with my personal experience as a nurse working shift work, raised interesting questions related to the interrelationship of the personal, professional and organizational obligation to manage fatigue. Understanding the experiences of night shift fatigue and workplace napping, its impact on our ability to provide care and our well-being, as well as perceptions and beliefs about this counter-fatigue measure, enhances our understanding of the phenomenon and the nuances embedded within this predominantly female profession. Using a feminist interpretive perspective illuminated the dark topic of night

shift work, the gender issues and power tensions related to nurses' fatigue experience and the use of workplace napping and adds to the literature underlying possible reasons why the profession has been slow to integrate steps to address this endemic problem despite the evidence from other male dominated professions. Now is the time to bring this topic out from under the covers.

CHAPTER 3   RESEARCH PARADIGM, METHOD AND ANALYSIS

Deductive positivist and post-positivist paradigms provide a fundamental piece of my nursing knowledge. The knowledge derived empirically along with the personal, ethical, aesthetic and sociopolitical knowing supports my care of patients. A feminist interpretive phenomenological approach was proposed as a methodology for this study as it is congruent with the goal of examining the subjective, contextualized human experiences, as the nurses exist within their cultural, social and historical backdrop and this aligns with my philosophical beliefs (Wojnar & Swanson, 2007).

The interpretive paradigm is inductive and supports the belief that multiple realities exist. Subjectivity is central, with knowledge and understanding hermeneutically co-created within the temporal and historical context of the individual life experience (Guba & Lincoln, 2005). Interpretivism seeks to understand the world in which we live, from the participants' perspective as impacted by their social and historical context (Creswell, 2007). Compatibly, feminism holds that "no aspect of social phenomena can be understood unless it is related to the history and structure in which it is found" (Fulton, 1997, p. 530). History and context are central to knowledge, and the subjective experience is the source of knowledge (Campbell & Bunting, 1991). Applying a feminist interpretive lens to the subjective experience of night shift fatigue among nurses and their use of napping added to the understanding of how the context in which nurses work impacted their practice.

3.1 INTERPRETATIVE PHENOMENOLOGY: A PHILOSOPHY AND A METHODOLOGY

Phenomenology is an interpretive approach to inquiry frequently used in nursing. Considered both a post-modern research methodology and a philosophical perspective, it aims to understand human phenomena. At its core, is the desire to understand the wholeness of the lived experience. Phenomenology offers multiple unique approaches, with those most commonly used in nursing being descriptive and interpretive (Lopez & Willis, 2004; Mackey, 2004; Wojnar & Swanson, 2007). As the topic of my inquiry focused on the critical care nurses' experiences of night shift fatigue and workplace napping, an interpretive phenomenological approach was adopted. This approach supported the exploration of the contextualized experience, and was compatible with the topic of interest, my personal beliefs, and a feminist perspective; a suitable approach to explore a foggily understood phenomenon.

Edmund Husserl, a German mathematician and philosopher is recognized as the founder of phenomenology. His approach, descriptive phenomenology, is based on the premise that the experience as perceived by the consciousness has value and should be the object of rigorous scientific inquiry. A hallmark feature of Husserl's approach is the setting aside or bracketing of the researcher's own experiences and preconceived notions. This is argued to allow the researcher to control for bias, and objectively remain open to the participant's experience. As the researcher achieves a state of neutrality or transcendental subjectivity, the researcher is able to interact with the subject. The participant's description of the lived experience allows identification of the universal essence or eidetic structures, an absolute unchanging truth. Essences can be extracted from the experiences without concern for the context. Descriptive phenomenology is most

often used to explore phenomenon that have not been previously fully explored (Lopez & Willis, 2004; Walters, 1995; Wojnar & Swanson, 2007).

Martin Heidegger was a student of Husserl. He believed that the focus of inquiry should be what people experience rather than what they consciously know, and that people are hermeneutic and able to self-interpret the significance of their own experiences. He believed that history and context are central to knowledge, and the subjective everyday experience is the source of knowledge. People have situated freedom, in that they are free to make choices, but within their social, cultural and political worlds. One of Heidegger's key concepts is that of dasein, described as the human way of being-there or being-in-the-world. This reflects his belief that people cannot abstract themselves from the world, and how it influences their choices and experiences. Thus the broader sociopolitical context is interwoven within their experience. Heideggerian phenomenology acknowledges how individual experience is informed by the many relationships and interactions that they have on multiple levels (e.g., nurse to nurse, nurse to family, community, organization, and globally), their interpretation of these interactions and how they live out these interpretations (embodied), as well as past and current experience and where they situate themselves (e.g., critical care nurse, mother, etc). By taking into account the unique, subjective, relational and contextual experiences of the phenomenon of workplace napping such as in this study, a greater understanding of the meaning given to the experience emerges (Campbell & Bunting, 1991; Lopez & Willis, 2004; Mackey, 2005; Walters, 1995; Wojnar & Swanson, 2007).

Heidegger's phenomenology involves the uncovering of commonalities and differences. Nursing educator, Patricia Benner promotes interpretive phenomenology as both a philosophy and a methodology. In her book, "*Interpretive phenomenology:*

Embodiment, caring, and ethics in health and illness", Benner (1994a) described the sources of commonality to be explored as; the situation, embodiment, temporality, concerns and common meaning. Understanding the situation or spaciality of an experience involves understanding the grounding of the experience. It goes beyond the geographical location to understand the cultural and historical participant's world. Embodiment involves understanding how the experience is lived out, and the skillful presence of the participant and their emotional responses. Experiences are grounded in time. Temporality unites the individual's experience of past to inform the present and future. The individual's experience is given dimension by time, making it more than the succession of the moments on the clock (Benner, 1994a; Mackey, 2005). The concerns of the experience are what matters to the individual, and what they find important. Common meaning describes the hermeneutic and cultural meanings that are noticed between people (Benner, 1994a).

Heidegger's way of understanding involves what he refers to as a fore-structure of understanding, built on the assumptions of situatedness and dasein (Dreyfus, 1991; Mackey, 2005; Wojnar & Swanson, 2007). The researcher and the participant come to the investigation, each with their backgrounds shaping their understanding, a prior awareness or taken-for-granted background. This fore-structure gives the context-dependent knowledge and experiences that the participant and researcher bring to the study and impacts how we understand the world (Dreyfus, 1991; Mackey, 2005; Walters, 1995). As such, researchers must spend time reflecting on their own pre-understanding and situate themselves in the research, so that they can more clearly understand the participant. This is not to say that they try to set their notions aside as in descriptive phenomenology, but rather they understand their own beliefs so that they can more truly interpret the

participant's. This process of interpretation is circular, moving back and forth between the researcher's understanding and what they are learning from the participant. This process is referred to as the circle of understanding or hermeneutic circle, as the meaning of the participant's experience is understood, and cogenerated by the two. Heidegger described this act of intersubjectivity and blending of meanings as co-constitutionality. The research moves beyond simply describing, to the meaning ascribed to the experience by the participant and the researcher, incorporating how the story of the participant resonates with the researcher. This approach emphasizes the rich descriptions residing within the narratives of everyday lives, as well as the interpretation beyond the literal meaning to identify the themes (or essence) in the stories (Benner, 1994a; Lopez & Millis, 2004; Mackey, 2004; Walters, 1995; Wojnar & Swanson, 2007).

3.2 FEMINIST THEORY AND EXPERIENCE

Feminist scholarship has historically involved the examination of women's life experiences, including oppression as related to gender in a patriarchal society, exposing power relations that oppress women. Underpinning feminism is the belief that power imbalances and oppressive structures are pervasive in our societies (Harding, 1986; Huntington & Gilmour, 2001). Because nursing is a predominantly female profession, gender is recognized as part of the contextualized experience of nurses whether they are male or female.

Feminism supports that there are multiple ways of knowing which can only be understood by examining the lived experiences of those being oppressed (Campbell & Bunting, 1991). The belief that knowledge is subjectively created, interpreted by language, and to be used for emancipation is central to feminism (Campbell & Bunting,

1991). The goal of feminist research is to identify and challenge the imbalances of power to reshape understanding and practice, and thereby lessen oppression (Kralik & van Loon, 2008). There is no one feminist methodology, theory, scholarship or set of rules, but rather a variety of theories and methodologies (Kralik & van Loon, 2008; Reid, 2004; Seibold, Richards & Simon, 1994). A singular methodology has been resisted, as that would be argued to reinforce domination of feminist scholarship (Reid, 2004; Seibold, Richards & Simon, 1994). This study was supported by feminist theory by respecting the common features of feminist methodology. Common features included a focus on the experience of those oppressed, while using qualitative and critical methods to explore those experiences (Campbell & Bunting, 1991; Reid, 2004). Campbell and Bunting outline the methodological consideration of feminist theory, and are summarized:

- research should be based on experiences, as experience is a valid source of knowledge.

- research should focus on the questions those oppressed, want answered.

- the researcher's background is part of the research itself.

- research is non-hierarchical, with the participants and researcher on a level field.

- the context and relationships of phenomena, including the history, are central.

- definitive boundaries between spheres such as personal, public, and political are artificial, rather than absolutes.

- the research should be validated and shared with the participants.

This current study was consistent with these methodological considerations. The study was based on the experiences of the nurses. The topic of inquiry was identified by a nurse and was relevant to those being studied. As a researcher, I acknowledge that I am shaped by my life experiences. As a female in a predominantly female profession, a nurse

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with experience working shift work, I was committed to being reflexive in the conduct of the study. As a peer of the participants, the potential power imbalance of a research study was minimized. The research was validated and shared with the participants. The feminist interpretive phenomenological approach gives voice to the nurses' experiences and acknowledges their lived experiences as a source of credible knowledge.

3.3 COMBINING INTERPRETIVE PHENOMENOLOGY AND FEMINIST THEORY

This study explored the lived experience of night shift fatigue and workplace napping for a group of critical care nurses. It focused on the critical care nurses' experience of how fatigue and napping affected their ability to provide care, and patient and caregiver safety within the organizational and sociopolitical context. Thus a methodology that focused on the contextualized experience was compatible with a central tenant of feminism, "no aspect of social phenomena can be understood unless it is related to the history and structure in which it is found" (Fulton, 1997, p. 530). Applying a feminist interpretive lens to the subjective experience of night shift fatigue and the use of napping helped understand how the context in which we work impacts nursing care. Similarly, Heidegger phenomenology is based on the perspective that the understanding of individuals does not occur "in isolation of their culture, social context, or historical period in which they live" (Wojnar & Swanson, 2007, p.174).

3.4 STUDY METHOD

3.4.1 SETTING

The population examined was a group of critical care nurses working at the Queen Elizabeth II Health Sciences Center, a tertiary care and academic hospital in Halifax,

Nova Scotia. The hospital has four inpatient critical care units. The unit of study was a medical-surgical intensive care unit (MSICU). The nurses worked a schedule of 12 hour night and day shifts, and many employed workplace napping as a night shift strategy.

As at the time of the study I was working in MSICU, I was an insider, thus facilitating access to the population and the establishment of credibility and rapport. As a staff nurse peer, power imbalances intrinsic in the research process were minimized, helping to establish a non-hierarchical relationship, supporting an important feminist tenant (Campbell & Bunting, 1991; Creswell, 2007). Studying from within the group is congruent with feminist interpretative phenomenology, as the prior understanding of the researcher can be an integral part of the inquiry process and the researcher's background is part of the research itself (Campbell & Bunting, 1991; Lowes & Prowse, 2001).

3.4.2 SAMPLE

Inclusion criteria for participating in the study included the following:

1. Bedside Registered Nurses full-time or part-time in MSICU for a minimum of 6 months (permanent, term or temporary position)

2. Work a schedule including 12 hour night shifts

3. Have had an opportunity to use workplace napping on night shift

Exclusion criteria included:

1. Unable to commit to research plan for data collection

2. Casual employment in MSICU (as casual shifts booked infrequently in this unit therefore diminished opportunity to experience the use of workplace napping).

3.4.3 PLANNED SAMPLE SIZE

Qualitative studies focus on an in-depth understanding from relatively small samples when compared to quantitative studies. The important feature is the collection of information-rich data (Patton, 2002). This is particularly relevant in phenomenology, to present an inclusive understanding of the voices of the participants (Benner, 1994a).

According to Morse, estimating sample size to reach saturation requires consideration of many factors. These factors include the qualitative method being used, the design and scope of the study, the nature of the topic, the quality of the data obtained including its usefulness and the number of interviews per participant, and the use of shadowed data (data from one participant that reflects the experience of others) (Morse, 2000). The recommended sample size in phenomenological studies can range from one to ten participants (Starks & Trinidad, 2007). This study was planned to involve an initial individual face-to-face interview with five to eight nurses, and a follow-up focus group with the participants. Five to eight participants is considered sufficient to collect the information-rich descriptions of the experiences needed for a phenomenological study (Creswell, 2007; Morse, 2000; Starks & Trinidad, 2007). Based on the factors outlined by Morse, this sample is adequate to provide a rich description of the phenomenon, and allow identification of the themes within the data.

3.4.4 SAMPLE TECHNIQUE

Initially, the study was presented to the MSICU Professional Practice Committee, including the Unit Manager and Educator, and a letter of support from the management of MSICU was obtained. Following this, and after ethics approval was received, letters of invitation to participate were placed in the mailboxes of all nursing staff (Appendix A).

An overview of the study was also posted in the staff communication book (Appendix B). A poster was placed in a common staff area (Appendix C). The letter of invitation provided an overview of the study including an explanation of the inclusion and exclusion criteria, and the commitment required to be involved. The researcher's name and contact information were included so that potential participants could contact the researcher if they had questions about the study. The letter included an attached slip of interest. If the nurse was interested in participating she/he could complete the slip and place it in a sealed labeled box at the nursing station. After 16 days, when most staff had a chance to read the letter and consider participating, the box was collected and opened. The established plan was that if more than eight participants volunteered for the study, an uninvolved person would be asked to do a blind draw of eight names from the box. Of the 40 nurses invited to be involved, 14 potential participants responded as interested in participating. Eight participants' names were blindly drawn by an uninvolved person. The initial eight all agreed to participate after being given a description of the study and an opportunity to ask questions. At the first interview, a full verbal explanation of the study was given and written consent, as outlined by the institution's Research Ethics Board, was obtained (Appendix D). A brief demographic profile was completed by each participant to support sample description and analysis (Appendix E).

3.4.5 DATA COLLECTION

Data collection involved an initial individual interview, and a second follow-up focus group. The individual interviews averaged 43 minutes in length. They were audio recorded and transcribed verbatim with attention to accuracy in text and punctuation (Braun & Clarke, 2006; Patton, 2002; Smythe, Ironside, Sims, Swensen & Spence, 2008).

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It was planned for interviews to be held at a place of convenience for the participant, either in their home, in a quiet room at the hospital during non-work hours, or at a convenient off-site location. Each of the eight participants was interviewed in a location of their choice. Six of the interviews were conducted in the participant's home, one in the participant's office, and one in a library. Interviewing in the home or location of the participant's choice is in keeping with feminist research principles, and facilitates non-hierarchical, conversational-style discussion of the topic. Pseudonyms were selected by the participants to provide anonymity and confidentiality. No notes were taken during the interviews to help establish a non-hierarchical milieu, conducive to feminist research. Initial impressions were recorded immediately following the interviews, thereby helping to capture data and initial thoughts of interpretation (Benner, 1984a; Patton, 2002). Analysis began immediately following the individual interviews, with a process of journaling impressions of the interviews. This provided a reflection of the research process, including methodological details as well as reflections examining my fore-structure of understanding (Creswell, 2007; Lincoln & Guba, 2005). Following the individual interviews, the participants were given a copy of the signed consent and a copy of the transcribed interview transcript. Providing the participants with a copy of the transcribed interview provided a method of member checking, thereby helping to ensure the accuracy and trustworthiness of the data (Lincoln & Guba, 1985).

Interviews used a non-hierarchal, informal conversational style with open ended, semi-structured questions and probes to facilitate collection of data from each participant about similar aspects of the phenomenon, while remaining open enough to accommodate informal discourse (Patton, 2002). It was important to not "conduct" an interview as such, as this would "freeze the phenomenological spirit" (Smythe, et al., 2008, p. 1392). It

was also salient to keep interviews conversational as prescribed interviews would be contradictory to feminist considerations (Oakley, 1981). Questions were open-ended and used naturalistic language, to explore the nurses' experience with night shift fatigue, their use of workplace napping and any safety implications (Benner, 1994a; Crewsell, 2007). The interviews strived to be open to the power structures that shape the nurses' experiences in the hospital setting, encouraging openness about perceived power relations and the context in which the nurses worked (Campbell & Bunting, 1991). The initial individual interview guide was developed by reviewing guides used for similar studies (Appendix F). The guide was re-worked as the interviews progressed, as the research was an iterative process, and each interview helped to inform subsequent interviews.

The eight individual interviews were followed by a focus group. Follow-up interviews allow time to reflect on the communication, and to ensure understanding has occurred (Benner, 1994a; Creswell, 2007). Focus groups are an effective way of communicating particularly in professions that practice in a social manner such as nursing. The familiarity of the group encourages natural discourse; one narrative can be enriched by triggering stories that support, counter, or contrast (Benner, 1994a). This also promotes conversational story sharing for women, as nursing is predominantly a female profession, and its use is congruent with feminist study (Bradbury-Jones, Sambrook & Irvine, 2009; Oakley, 1981). The goal of the follow-up focus group was to create a conversational discourse conducive to storytelling that would foster a back and forth movement between partial understanding and more complete understanding, and further develop the picture of night shift fatigue and napping (Mackey, 2005; Patton, 2002; Oakley, 1981).

Although individual interviews are commonly used in phenomenology, focus groups are also compatible with the exploration of the experience, and can be used along with individual interviews to highlight experiences, and provide a method of member checking (Sabo, 2009). The use of focus groups could be argued as deviating from some methodological rules. Conversely, it is presented that methods are "not the fixed entities with unbending rules for implementing them they are depicted as being in the methods literature" (Sandelowski, 2008, p. 11). Adaptations such as the use of focus groups can be supported based on the larger context of the study and congruency with the methodological traditions, as outlined in this feminist interpretive phenomenological study (Sandelowski, 2008).

A date and time for the focus group was selected that was agreeable to all eight participants. Five of the eight were able to attend. One of the participants offered to host the focus group in her home, thus providing a comfortable environment conducive to the natural social conversational discourse that is congruent with feminist research (Benner, 1994a; Oakley, 1981). The focus group was held between four to eleven weeks after the individual interviews and after the completion of the preliminary analysis. The focus group started with a reminder of the confidentiality of the group discussion. An overview of the preliminary analysis of the individual interviews was presented to the group, to solicit feedback and stimulate discussion. This provided a method of member checking to ensure the trustworthiness of the data previously gathered, thus helping to solidify the initial interpretations (Frey & Fontana, 1991; Lincoln & Guba, 1985). By presenting the preliminary findings to the participants, I was able to confirm that the findings were relevant to the participants and that they could relate to the themes. It provided an opportunity for participants to share ideas around "what's next", as the participants

considered the next steps and ideas for dissemination. The focus group lasted approximately 100 minutes. It was audio recorded, transcribed and analyzed following the same strategy as the individual interviews.

3.4.6 DATA ANALYSIS

This section explains how analysis was completed in keeping with the principles of feminist interpretive phenomenology; how the topic of night shift fatigue and workplace napping was illuminated by presenting the voices of the participants through their descriptions of the experience. My experience as a critical care nurse with experience using workplace napping to mitigate fatigue on night shift facilitated the back and forth process of data collection and analysis. My prior awareness was used in the co-creation of understanding. I remained open to the subjective experiences described, as well as cognizant of the nurses' position in the andocentric system, as I reflected on the data, in keeping with the principles of feminist interpretive phenomenology.

Data analysis in interpretive phenomenology is generally accepted as not bound by strict rules, rather it is perceived as more of a free art of seeing meaning (Smythe et al., 2008). Van Manen explains that this art of seeing and formulating a thematic analysis, does not mean that the same thing has surfaced again and again, but rather that we understand the theme as something significant (1990). As a novice researcher, I was guided in analysis by readings of Benner's (1994a) work and the thematic analysis approach of Braun & Clarke (2006). Data analysis was also supported by the advice of my supervisors, as experienced researchers familiar with my topic and philosophical approach. Preliminary analysis began with each interview. As the research was an iterative process, the preliminary analysis helped to guide each subsequent interview. The

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collective individual interview data was analyzed prior to the focus group and reviewed

with an experienced researcher. This allowed the presentation of the initial descriptive

themes to the group for input into the analysis. This facilitated the focus group and helped

to give a more complete understanding of the phenomena. This sharing of the research

process between the researcher and the participants is compatible with a feminist

interpretive phenomenological study.

Initial data analysis began with immersing myself in the data, and noting what was

interesting, and beginning to make sense of the data. Listening to the recordings, reading,

writing and reflection were integral parts of the process, moving the data through themes

to a phenomenological storied text (Goldberg, 2005; Mackey, 2004). Analysis proceeded

in a circular process of immersion in the data, thematic analysis and the identification of a

paradigm case (Benner, 1994a). The interpretive phenomenological identification of

themes in the text involves more than identifying elemental units, as it includes

interpretation not simply description. The researcher moves back and forth between the

text and analysis to identify meaningful patterns, going beyond the literal meaning to find

the fore-structures and themes in the data (Benner, 1994a; Mackey, 2005). This involved

moving back and forth between the parts and the whole, and between my forestructure

and what I was learning from the participant. This circular process supported the circle of

understanding or hermeneutic circle, a blending of meanings through this act of

intersubjectivity (Lopez & Millis, 2004; Mackey, 2004; Walters, 1995; Wojnar &

Swanson, 2007). Benner described the goal of interpretive phenomenology as using

"discourse to uncover naturally occurring concerns and meanings" (Benner, 1994a, p.

112). She suggested three strategies for understanding, those being paradigm cases,

thematic analysis and exemplars.

Paradigm cases are "strong instances of concerns or ways of being in the world, doing a practice, or taking up a project" (Benner, 1994a, p. 113). The interpretive researcher does not need to identify in advance what the criteria of a paradigm case will be, but rather allows the discovery process to help guide its identification. As an interview was reviewed for overall understanding, issues or topics were identified for deeper consideration. Moving back and forth from the whole text to these areas of interest, I examined the insider's account for incongruities or repeated concerns. The circular process fostered understanding. It is acknowledged though that the research questions and the philosophical underpinnings, do guide what is identified. The examination of a paradigm case helped me to examine my own perceptions, as well as serving as a comparison for new cases, and can be used in the presentation phase (Benner, 1994a).

Thematic analysis is a process of identifying meaningful concerns within the data. A theme "captures something important about the data in relation to the research question, and represents some level of *patterned* response or meaning within the data set" (Braun & Clarke, 2006, p. 82). Themes come from the data, and as such, are not pre-identified to meet the researcher's pre-understanding. The identification of themes goes beyond the semantic content to examine the broader meaning (Braun & Clarke, 2006; Goldberg, 2005). This phase involved exploring the initial analysis, and focusing on the broader analysis of identified themes, and how the themes work together (Braun & Clarke, 2006). I moved back and forth between the whole and parts of the text, acknowledging the inconsistencies within it, as the commonalities of the experiences were identified (Benner, 1994a). The literature was revisited, along with my notes. Data within the themes is coherent, and themes are compatible with a feminist interpretive

perspective. The themes were substantiated by writing a detailed story of what the themes tell (Braun & Clarke, 2006).

The preliminary analysis of the data from the individual interviews was prepared for presentation to the participants during the focus group. This helped to solicit input from the participants into the analysis, as well as stimulate discussion of aspects of the phenomena that may not have been fully illuminated in the individual interviews. The final opportunity for analysis was the generation of a scholarly report. The report tells the story of the experience through the data. The report must be clear and concise yet provide enough extracts and evidence to demonstrate the themes in the data. It relates the story of the data to the research questions and the literature (Braun & Clarke, 2006).

3.5 ESTABLISHING RIGOUR / TRUSTWORTHINESS

Trustworthiness as described in the 1985 seminal work by Lincoln and Guba is related to the fundamentally important issue of how we can ascertain that findings are worthy of attention. The term "trustworthiness" later became associated with "rigour", and the two are often used interchangeably. In naturalistic qualitative inquiry, Lincoln and Guba identify four criteria to establish trustworthiness; credibility, transferability, dependability and confirmability. This discussion will review some of the main strategies built into the research process to support its trustworthiness, and as congruent with feminist interpretive phenomenological research. The research itself was established as an iterative rather than a linear process, supporting the rigour of the study. As a researcher, I remained open, sensitive, and responsive, thus supporting the conduct of a trustworthy and rigorous study (Hall & Stevens, 1991; Morse, Barrett, Mayan, Olson & Spiers, 2002).

3.5.1 CREDIBILITY

Two of the key techniques identified by Lincoln and Guba to ensure credibility are prolonged engagement and persistent observation. These tend to be associated with ethnographic studies and extended field work, and are described as being involved long enough to understand the context and detect distortions in the data, and long enough to build trust (Creswell, 2007; Lincoln & Guba, 1985). As research conducted by an insider with personal experience with a phenomenon and within the work group, this study meets these criteria. Additionally, as I did the research as a staff nurse peer, a feminist approach purports that this close and equal, non-hierarchical relationship leads to more significant data (Oakley, 1981). In-depth repeat interviews also supported the credibility of the study (Creswell, 2007).

The third technique identified to establish credibility was the use of triangulation. One mode of triangulation is the use of different data sources or different data collection methods. This study collected data by individual interviews, and a focus group, thereby providing a source of triangulation within a single methodology (Creswell, 2007; Lincoln & Guba, 1985; Patton, 2002). As a further method of securing the credibility of this study, opportunities for member checking or participant validation were used (Creswell, 2007; Koch, 2006; Lincoln & Guba, 1985; Walters, 1995). Initial interview data was summarized and presented in the focus group, thereby providing an opportunity to assess the adequacy of the summary in addition to adding further details. Expert review was also sought during the analysis process from supervisors, to ensure that I was remaining true to the data (Creswell, 2007; Walters, 1995).

3.5.2 TRANSFERABILITY

The second criterion identified as supporting the trustworthiness of a study is its transferability. This was demonstrated by providing thick descriptions of the study so that a reader could assess if it is potentially transferable to another population (Creswell, 2007; Lincoln & Guba, 1985). As a phenomenological study, thick description and quotes of the individual's voice were essential. The large amount of text collected supports clarity and confidence in the findings (Benner, 1994a; Walters, 1995). Relevant demographic data was collected and a description of the setting and sample was provided to enhance the reader's understanding of the context of the study.

3.5.3 DEPENDABILITY AND CONFIRMABILITY

The final two criteria are dependability and confirmability. Lincoln and Guba suggest that these criteria are secured by the addition of a method of triangulation as well as metaphorically ensuring a clear audit trail (Creswell, 2007; Lincoln & Guba, 1995). This was done by a number of means including the clear progression and documentation of the study in a step-wise fashion as well as the maintenance of a reflexive journal. As a graduate student, I followed a logical progression as monitored and supported by supervisors. This process was documented throughout the study. Supporting the confirmability of the study, all findings were grounded in the data and logically described. Additionally, to support all criteria of trustworthiness, Lincoln and Guba advocate for the use of a reflexive journal as a diary the researcher keeps providing an ongoing log of methodological details as well as personal reflections. By clearly identifying my location as a researcher at the onset of the study, I clarified my being-in-the-world and support my part in the research process (Creswell, 2007; Walters, 1995).

3.6 ETHICAL CONSIDERATIONS

A study of human participants that is not trustworthy would be an unethical study. I contend that the discussion of this study's trustworthiness provides evidence, and therefore supports the study as foundationally an ethical study. Additionally, many ethical considerations are addressed throughout this thesis. This included conducting the study in a reflective manner congruent with the feminist interpretive paradigms, and ensuring that my subjectivity is used as an asset in the process, rather than a negative source of bias (Cohen & Crabtree, 2008). I will review some of the more pertinent ethical considerations as outlined by the *Tri-Council Policy Statement (TCPS): Ethical Conduct for Research Involving Humans* (Canadian Institutes of Health Research, Natural Sciences & Engineering Research Council of Canada & Social Sciences & Humanities Research Council of Canada, 2010).

The ethical conduct of the study was foremost in the planning and implementation of the study. The supervision by a knowledgeable committee helped ensure this, as well as my personal knowledge of the ethics process. Ethics approval was obtained from the institution's ethics review board, as a non-intervention study with low risk to the participants and the potential to improve caregiver and patient safety.

Principles of fairness and equity were considered. The rationale for the population studied and participant recruitment was outlined. Inclusion and exclusion criteria were explained. Participation was voluntary. As the participants are practicing nurses, those lacking capacity were not enrolled. No study procedures were implemented prior to obtaining consent. Informed consent was addressed as a process, and a consent form was signed to document the process. A copy of the signed form was given to each participant. The institution's template for the consent form was followed (Appendix D). It included a

description of the study, the commitment required, a description of privacy safeguards, and an explanation that the participant is free to quit if they choose. Compensation was outlined in the consent (e.g., stipend for each visit, the participant's name entered in a draw for e-reader).

Privacy and confidentiality was protected as outlined in the TCPS and Capital Health privacy policy (Capital Health, 2010). Pseudonyms were used to identify participant data. All data including the master list linking names with codes or pseudonyms are kept in a secure file cabinet accessible only by the researcher. Data will be maintained for a minimum of seven years as outlined by Capital Health.

3.7 SUMMARY

This chapter provided an overview of the research paradigm and method used in the conduct of this thesis study. The study explored the contextualized, lived experience of night shift fatigue in a group of critical care nurses, their perceptions of workplace napping and the effect on patient and nurse safety. The study was conducted in a rigorous and ethical manner. Data collection involved an individual interview, and a follow-up focus group with eight critical care nurses from a local tertiary hospital. Analysis was completed in keeping with the principles of feminist interpretive phenomenology. The back and forth process of data collection and analysis was facilitated by my role as both a researcher and a staff nurse peer of the participants with experience using workplace napping. My prior awareness was used in the co-creation of understanding. I remained open to the subjective experiences described, as well as cognizant of the nurses' position in the androcentric system.

CHAPTER 4   THE MEANING OF NIGHT SHIFT FATIGUE

> Nine hours into Charles Lindberg's sols flight from New York to Paris:
>
> *I'm beyond the stage where I need a bed, or even to lie down…. My mind clicks on and off, as though attached to an electric switch with which some outside force is tampering. I try letting one eyelid close at a time while I prop the other open with my will. But the effort's too much. Sleep is winning. My whole body argues dully that nothing, nothing life can attain, is quite so desirable as sleep. My mind is losing resolution and control.*
>
> (Lindberg, 1953, p. 233)

4.1 INTRODUCTION

The purpose of this thesis study was to explore the lived experience of night shift fatigue and workplace napping of a group of critical care nurses. It focused on the critical care nurses' experience of how fatigue and napping affected their ability to provide care, and patient and caregiver safety within the organizational and sociopolitical context. This chapter provides a snapshot of the critical care nurses that participated in the study. The relationship of the research findings to the questions will be delineated. A reflection of what the experience of night shift fatigue meant to the participants will be painted, highlighting the sources of commonality in their experiences (Benner, 1994a). The themes will be introduced, and the use of a paradigm case will be explained.

4.2 THE PARTICIPANTS

The participants are a group of critical care nurses who, through their descriptions of their experiences, displayed great commitment to patient care. The results of the demographic profile show that the participants were a homogenous group of experienced female critical care nurses, with seven of the eight over the age of 41 years (4 participants

41-50 yrs, 3 participants 51 years old or greater) and seven of the eight participants having more than 15 years nursing experience. One nurse fell into the 20 to 30 year old range with 2 to 5 years of nursing experience (Table 2).

Table 2: Age and Experience of Participants

Age of participants	20-30 years	31-40 years	41-50 years	51 years & over
Number of participants	1	0	4	3
Total nursing experience	Less than 2 years	2-5 years	6-15 years	More than 15 years
Number of participants	0	1	0	7
Nursing experience in an area that supports night shift napping	Less than 2 years	2-5 years	6-15 years	More than 15 years
Number of participants	0	1	2	5

The participants worked an average of 67.5 hours per two week period (range 37.5 to 75 hours). Their drive home ranged from 10 minutes to 50 minutes, with the average being a 27 minute drive. Three of the eight participants identified their current health as 'excellent' and five described their health as 'good'. A number of the participants indicated that they were the primary caregivers for family members in their personal lives (Table 3).

Table 3: Participants' Responsibility as Primary Caregiver in Personal Life

Primary caregiver for	Children, under age 18 years	Spouse with health challenges	Parent with health challenges	Other family or friend with health challenges
Number of participants	3	1	1	0

4. 3 THE RELATIONSHIP OF THE RESEARCH FINDINGS TO THE QUESTIONS

The research questions posed at the beginning of this study reflected my line of inquiry. They reflected the need for the study as a result of existing gaps in the research literature as well as my personal experience as a critical care nurse. The questions were further informed by my curiosity about fatigue and the value of workplace napping as a countermeasure to fatigue. They guided the literature review and informed the study design. I proposed the following questions to shed light on this little studied phenomenon within nursing work:

1. What are critical care nurses' experiences of night shift fatigue and workplace napping?

2. What meaning do critical care nurses give to night shift fatigue and workplace napping?

3. What factors do critical care nurses' perceive as supporting or challenging the use of workplace napping?

4. What are critical care nurses' perceptions of how night shift fatigue and workplace napping impacts patient care?

5. What are critical care nurses' perceptions of how night shift fatigue and workplace napping impacts the safety of nurses?

Serving as a template, the research questions gave rise to the emergent core themes. The final themes remained true to the feminist interpretive phenomenological approach.

4.4 THE MEANING OF NIGHT SHIFT FATIGUE: A CONCERN FOR SAFETY EMBODIED BY FEAR

Understanding the critical care nurses' experience of night shift fatigue involved unearthing the commonality of their experience within the historical, social and cultural nursing context. My pre-understanding of this experience was similar to that of the participants. As the interviews and analyses unfolded, I moved back and forth between my pre-understanding of the experience and what was shared with me by the nurses. The back and forth nature of interpretation between my understanding and that of the nurses, through their narratives resulted in the cogeneration of the meaning of the experience (Benner, 1994a; Lopez & Mills, 2004; Mackey, 2004; Walters, 1995; Wojnar & Swanson, 2007). The readiness of the participants to share their stories and participate in the research confirmed for me, the importance of examining the experience of night shift fatigue and workplace napping.

As the interviews and analysis progressed, the meaning of the experience of night shift fatigue became illuminated. Repeatedly, nurses described an overwhelming concern for safety; patient safety and personal safety. One of the sources of commonality explored in interpretive phenomenology is 'concerns'. Concerns of the experience are what matters or what is meaningful to the individual (Benner, 1994a), and safety mattered to all of the participants. They were concerned about being able to provide safe care at an exemplary level that both they and their coworkers found acceptable. This 'care' involved their personal actions, plus supporting other nurses and monitoring the care of the healthcare team. The overwhelming concern for safety was embodied in the feeling of fear; fear that fatigue would result in harm to a patient and fear of driving themselves home safely in the morning after a night shift.

Safety has a long history of importance for nurses, and is embedded in the *Code of Ethics for Registered Nurses* (CNA, 2008). Over the past two decades, patient safety has been acknowledged as one of the central issues in healthcare (Baker & Norton, 2001; Kohn, Corrigan & Donaldson, 1999; Storch, 2005). The term 'safety culture' was first noted in a 1988 report that followed the Chernobyl nuclear disaster. Since then, the term has become part of the common vernacular in high-risk industries. In healthcare, the concept of safety culture includes not only the safety of the care providers, but also the patients in their care (Feng, Bobay & Weiss, 2008). Mustard (2002) defined patient safety culture as "a product of social learning; ways of thinking and behaving that are shared and that work to meet the primary objective of patient safety" (p. 112). The safety culture belongs to the group, and is the 'way they do things' on a daily basis to promote safety (Feng, Bobay & Weiss, 2008). What the participants of this study identified, was that their work group recognized the threat that fatigue posed to patient and caregiver safety; safety was their concern, and they had adopted 'a way of doing things' that promoted safety. That 'way of doing things' included the use of workplace napping.

'Embodiment' is described as the "skillful comportment and perceptual and emotional responses" to the experience (Benner, 1994a, p. 104). The concern of this group for safety was embodied in the overarching emotional theme of fear. They feared the adverse effect of fatigue on their mental alertness and capacity would have a negative impact on patient care delivery. Additionally, fear extended to include personal and public safety, when they drove home after working night shift. Fear is defined as an "unpleasant emotion caused by the threat of danger, pain, or harm" (Oxford Dictionary, 2013). It is caused by an identifiable source, and is associated with such reactions as apprehension, dread and tension (Whitley, 1992). Fear is a normal and useful emotion

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that "can motivate learning and performance of positive, adaptive behaviors" (Whitley, 1992, p. 159). The fear of the negative impact of fatigue contributed to the unit's evolution of a safety culture that acknowledged fatigue as a threat, and adopted strategies to help reduce that threat. Workplace napping was the strategy most strongly supported as helping the nurses to manage night shift fatigue, as well as promoting patient and caregiver safety, thereby lessening the fear that something ill-fated might occur.

As experienced critical care nurses, the study participants described a myriad of strategies to reduce the impact of night shift fatigue, but workplace napping was resoundingly identified as a strategy that facilitated the provision of safe care and a safe drive home. However, although the participants recognized how essential workplace napping was to safety and although they identified that research supported its use, they described how they were apprehensive that 'someone' would tell them they were 'not allowed' to use workplace napping on their breaks. The nurses' experiences revealed the multidimensional tensions in cultural beliefs and expectations surrounding the use of workplace napping within nursing, management, and the public; tensions that kept the use of workplace napping hidden. These tensions are revealed in the complexities of the contextual forces impacting the lives of the participants both as women and as nurses, and reflect the 'common meaning' of what is expected of nurses and women (Benner, 1994a).

Understanding experiences within their context is central to feminist interpretive phenomenological studies. Individuals are part of a cultural, social and historical context, and experience cannot be fully understood without acknowledging this relationship (Fulton, 1997; Wojnar & Swanson, 2007). One of the sources of commonality explored in interpretive phenomenology is how the individual is 'situated', or the 'situation'. This involves understanding how the individual perceives themselves historically, socially and

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relationally (Benner, 1994a). Throughout the following five chapters that discuss each of the individual themes, a picture will develop of some of the historical, social and cultural forces that are interwoven throughout the nurses' experiences of night shift fatigue, and the resulting tensions associated with their use of workplace napping.

The critical care nurse participants were situated within the historical backdrop of a predominantly female profession. Nurses work within a healthcare system that still adheres to a biomedical philosophy and patriarchal, hierarchical model (Kazanjian, 1993). Advancements have been made in a number of male-dominated professions in the recognition of fatigue as an unsafe workplace condition and in the implementation of workplace napping as a strategy to reduce its impact (Lerman et al., 2012). The nurses recognized the grave potential fatigue has to impact safety, yet they worked in a system that did not recognize the impact of fatigue. In fact, fatigue has frequently been identified as a weakness in the individual (IOM, 2004; Stoller et al., 2007) which may be a contributing factor to the hidden nature of workplace napping. Compounding this is the nurses' position of diminished influence over their own practice within a hierarchical system which places greater value on certain discipline-specific beliefs over others (Doering, 1992; Roberts, 1983). The analysis illuminated key tensions associated with fatigue management, such as the gendered nature of nursing work as well as the incongruence among the cultural expectations and beliefs and shared meanings held by nurses, management, and the public.

The final source of commonality explored in this feminist interpretive phenomenological study was 'temporality'. All experiences are grounded in time. Temporality explains how the individual's experience is united with the past to inform the present and the future (Benner, 1994a; Mackey, 2005). The aspects of temporality that

will be explored in subsequent chapters related to the nurses' explanations and insight into the impact of ageing on the experiences of fatigue, and how inexperience in critical care and age alters the impact of fatigue and its management. Age and experience were not necessarily measured by linear time or years, but rather by the reflection of how they impacted their concern for safety and its embodiment of fear. As well, the nurses provided insight into the changes in the workplace over time related to staffing and workload and how this has impacted their experience of night shift fatigue and their anxiety related to their concern for safety.

4.5 THE THEMES

The meaning of the experience of night shift fatigue was enmeshed within the nurses' overwhelming concern for safety, and this concern was embodied by a response of fear. Within this overarching understanding of the experience, themes were identified. The identification of themes involved going back and forth between the data and the analysis to identify meaningful patterns, and between my prior awareness and what I was learning from the participants. Identification of themes involved going beyond the literal to examine the meaning of the stories of the participants (Benner, 1994a; Mackey, 2005). The themes reflect the impact fatigue had on the nurses professionally and personally, and how they managed that fatigue (Figure 1). The first theme described the impact of fatigue on safety, and the resulting experience of fear; a fear of the impact of fatigue on patient safety and a fear of the impact of fatigue on the nurse's safety and the public's safety on the drive home. The second theme identified factors that contributed to and were interwoven with the experience of night shift fatigue, both within the nurse personally, and within the work context. The third and fourth themes highlighted how the nurses

managed fatigue and reduced the fear of its impact on their patients' and their personal

safety, and the multidimensional tensions related to the use of workplace napping within

nursing, management and the public. The fifth and final theme reflected how fatigue

impacted the nurses' personal lives and strategies for rejuvenation. Chapters five through

nine will explain these themes based on the experiences described in both the individual

interviews and the focus group.

Figure 1: Overview of the Themes related to the Overarching Meaning of Night Shift
Fatigue: A Concern for Safety Embodied by Fear *[1]

_____
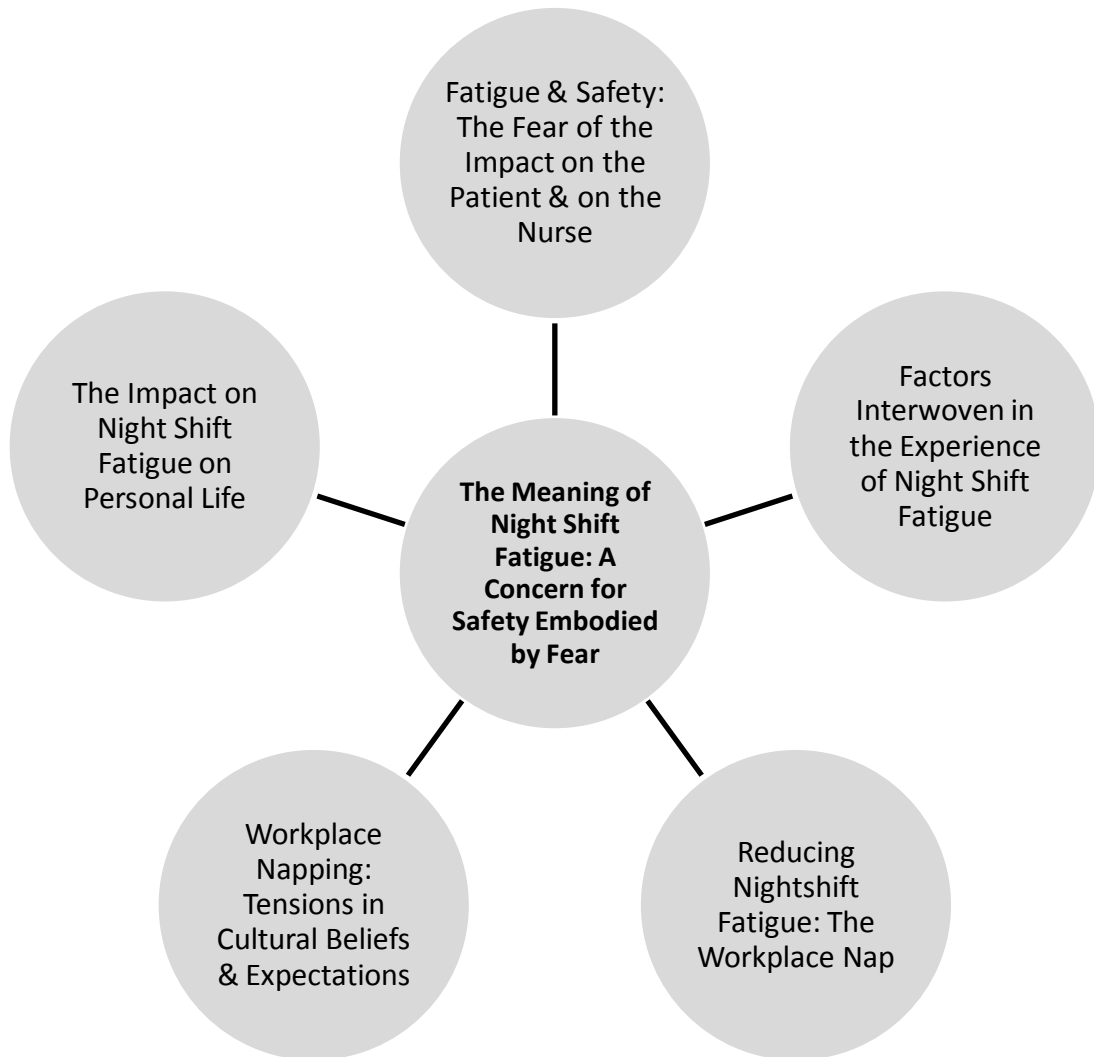
[1] The intent of this diagram is to visually portray the overarching meaning of night shift fatigue and the related themes. These themes are interconnected in stories of the participants' experiences.

4.6 PARADIGM CASE

The identification of paradigm cases is a strategy for understanding the lived experience. Benner defines a paradigm case as a "strong instances of concerned or ways of being in the world, doing a practice, or taking up a project" (Benner, 1994a, p. 113). As research evolves, the researcher allows the discovery process to guide the identification of a paradigm case. In this study, the paradigm case was one that clearly reflected the lived experience of night shift fatigue, and the concern for patient and personal safety and the embodied experience of fear. The paradigm case spoke to me of the experience, and was used to help support the analysis both in my own reflection and in discussion with my supervisor. This interview provided a well developed articulation of the experience, and during the preliminary analysis phase, it was this interview that triggered an 'ah ha' moment, as the meaning of the experience, the importance of safety and the embodiment response of fear, became apparent.

4.7 SUMMARY

This chapter has provided an introduction to the critical care nurse participants and an overview of the overall meaning of their experience of night shift fatigue. The overarching understanding of the meaning of night shift fatigue, the concern for safety as embodied by fear, was illuminated by understanding the phenomenological commonalities of the experience within the nurses' historical, social and cultural world. The five main themes identified within this overarching understanding were described, opening the door into their experience of fatigue and the use of workplace napping. This chapter has set the stage for the following five chapters which further develop each of the five themes.

CHAPTER 5   FATIGUE & SAFETY: "THE BATTLE TO STAY AWAKE"

5.1 INTRODUCTION

This study reflects how the physical and mental demands of nursing practice contributed to the multidimensional experience of fatigue. All of the participants described physical manifestations of night shift fatigue. Their descriptions included: muscle fatigue and poor posture, slowed physical movement, tired eyes, nausea, shakiness and headaches. Although all the participants identified fatigue as affecting them physically, they expressed greater concern for the impact of night shift fatigue on their mental capabilities. Few studies have highlighted the increased concern of one type of fatigue over another. However, a study by Barker and Nussbaum (2011) found that nurses ascribed greater importance to one aspect of fatigue over another. They described the significant physical demands of their work which was reflected in the reporting of high levels of physical discomforts. At the same time, the authors reported that nurses identified significantly higher levels of mental fatigue which is similar to the participants of this thesis study.

> *If it was just all physical, I think I can go all night.* (Soup) *[2]

This chapter will outline the first major theme identified through the interviews and focus group with the nurse participants and provide an understanding of the phenomenological sources of commonality (Benner, 1994a). The first theme relates to the nurses' concern of the impact of fatigue on safety, both on patient safety and on their

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[2] The names of all study participants were changed to ensure anonymity and confidentiality

ability to safely drive home after the night shift. This concern was embodied by feeling fearful of the impact of fatigue on safety.

5.2 THE EXPERIENCE OF NIGHT SHIFT FATIGUE: THE FEAR OF THE IMPACT ON THE PATIENT

It absolutely ....terrifies me, that I'm going to make a mistake and a patient will be affected when I'm fatigued at work. (Anne)

Repeatedly, the participants described how concerned they were that their fatigue might result in harm to patients. They described the fatigue of night shift as being pervasive, invading their cognitive abilities and confidence, and they feared the threat of mental fatigue.

I fear the mental more than the physical. I mean if we make a mistake… I mean physically, you can not turn someone, and it's not going to kill them.
But, if you make a mistake with a medication…or if you miss something on your assessment, those repercussions… (Soup)

The participants identified that this impairment of their mental capabilities caused them to fear harm may come to a patient. According to Benner (1994a), concerns, as one of the sources of commonality explored in interpretive phenomenology, are what matters to the person. The participants of this study clearly communicated what mattered to them; they were concerned for their patients' safety. The emotional response to fatigue threatening patient safety was embodied by the experience of fear. The participants identified the mental impairments of impaired thought processes and communication as impacting patient care.

5.2.1 IMPAIRED THOUGHT PROCESSES

The participants explained that night shift fatigue impaired their ability to "think clearly" and they were fearful of "missing something". They described feeling "slow", "stupid" or "stunned", and described experiences such as "the bob", an involuntary moment of sleep resulting in a head bob. Additionally, they described an impaired ability to remember what they had done or recall what they had been told or read.

> *It feels like I am slow, my thought processes are very slow. I find I make stupid mistakes, like just errors, say in math.*
> *Sometimes I'm just more worried that I'm missing something.* (Anne)

> *It's not the big things that get overlooked, because everyone acts on those. It's those things... 'this is festering, is something going to happen here?'. It's picking up on the little things.* (Guy)

The nurses spoke of a fear of impairment of their cognitive processes and a loss of confidence in their ability to manage the complexities of caring for a critically ill patient. They described an awareness of their diminished ability and compensated by doing "the double check, the triple check" on many tasks that would not require this degree of vigilance if not fatigued, in an effort to minimize any potential impact on the patient.

> *Things you would never do, like ... you'll set the pump, but you'll go back, 'did I really just put that in?' 'Did I put 2.5 for that insulin, or did I put 250?' You know, you do the double check, the triple check.* (Jigger)

The participants' descriptions of the physical effects and the cognitive or mental effects of fatigue are in keeping with those outlined in the literature (see Table 1). Their descriptions of a diminished ability to think clearly, feeling slow or stupid, experiencing anxiety related to perceived or real inability to attend to all of the details of their work, and impaired recall, reflected the cumulative performance degradation of

neuropsychological functioning associated with fatigue. Their descriptions of 'the bob' are reflective of a phenomenon known as micro-sleeps. Micro-sleeps are very short periods of sleep in sleep deprived people. Often people are unaware that micro-sleeps have occurred. Of concern, during these periods of micro-sleeps, is the lack of overall awareness of what is occurring around the individual (Ross, 2008). Such occurrences are a disturbing indicator of a significantly diminished level of alertness. A model of the effects of sleep loss and fatigue developed by Papp et al. (2004) identified three main areas impacted by fatigue: learning and cognition, job performance, and personal life. The nurses' descriptions of how fatigue impacted their mental capabilities are congruent with the models' effects on learning, cognition and job performance. Consistent with the model by Papp et al. (2004), the nurse participants in my study described altered executive functioning such as diminished higher-order thinking skills and complex thought processes including decision making.

Much of the literature suggests that a fatigued person has an impaired ability to assess their own level of alertness (Culpepper, 2010; Lerman et al., 2012; Rogers, 2008; Van Dongen et al., 2003). In contrast, most of the participants in this study indicated that, in their experience with night shift fatigue they were, in many ways, cognizant of impairments that could potentially negatively impact their ability to provide the level of care required by a critically ill patient. This personal awareness of their diminished abilities and the resulting embodiment of this concern as feeling fearful was a consistent thread throughout the interviews. It may be that because these nurses recognized the vulnerability of their very ill patients, and felt the weight of responsibility for their patient's well-being, they were more aware of the importance of acknowledging their fatigue. They described feeling anxious about such tasks as medication calculations, and

repeatedly talked about their fear of "missing something" in their ongoing assessment and care. They expressed feeling personally responsible for their own assigned patient(s), as well as a shared responsibility on night shift for all patients, particularly when supporting less experienced nurses. This personal responsibility extended to include the care and decisions of the broader healthcare team.

> *They can't speak so I think you can't, in critical care, you cannot just assume that the doctor's going to do it, or the respiratory therapist is going to do it. You have to take on that accountability as the bedside nurse.* (CL)

The literature clearly identifies how vulnerable the critical care patient population is, and their limited physiological ability to compensate for errors. The critical care literature also highlighted that the "amount of cognitive information needed to reach a correct decision is high and often exceeds the upper limit of information that can be held in the conscious memory" (Kiekkas et al., 2011, p. 37). Caring for critically ill patients requires frequent rapid decision-making with estimates as high as one care decision every thirty seconds (Bucknall, 2000). Critical care nurses on night shift have been shown to spend more time assessing and evaluating patients than nurses on day shift, with the reasons suggested to be related to fatigue impairment of thought processes, decision-making abilities and memory (Bucknall, 2000). The degree of care complexity plus the known neuropsychological impairments of fatigue are cause for concern. The participants' expression of fear of harm coming to a patient may be indicative of their ongoing awareness of the high level of risk, and the precarious balance of the patients' safety despite their attempts to manage their level of fatigue impairment. It may be that this underlying fear is part of the nature of critical care nursing, and that it is compounded to a concerning level by fatigue.

The participants explained how they felt the weight of the responsibility for the well-being of their patients. They described being responsible for their own actions, as well as supporting less experienced nurses, and monitoring other healthcare providers. Ethically, nurses are responsible for the provision of safe, ethical, competent care, and they are ethically required to "intervene to address unsafe, non-compassionate, unethical or incompetent practice" (CNA, 2008, p. 9). They have an ethical responsibility to advocate for persons in their care (CNA, 2008). My experience would suggest that nurses take these responsibilities very seriously, and this is particularly apparent in the critical care environment where each action or decision has the potential to have a negative impact, as patients often have limited ability to participate in care decisions and to compensate for errors. The level of nurse stress has been shown to be associated with working with less experienced coworkers, and being unable to control the level of experience of their coworkers (Hall, 2004). When considered within the context of night-shift fatigue, coupled with working with healthcare providers less competent than the care requires, moral distress may arise (Hamric, Borchers & Epstein, 2012).

The hospital for this study was a teaching hospital, and as such the unit of study is staffed by medical residents on nights, with staff physicians at home and available by phone and available to come in if the patient care situation requires it. The nurses were accustomed to working with medical residents with varying levels of expertise. Furthermore, medical residents rotate briefly in and out of the unit. As the constant presence, the nurses work collaboratively with the physicians to ensure the delivery of safe and competent care. But as the participant CL pointed-out, the bedside nurses accept the responsibility for ensuring the patient receives the care needed while having less

control over the plan of care than the physician, yet their responsibility is often just as great (Hall, 2004).

5.2.2. IMPAIRED COMMUNICATION

The participants described night shift fatigue as impeding their ability to communicate and potentially undermined their relationships with patients, patients' families, and coworkers. Additionally, impaired communication impeded the transfer of essential patient care information between nurses. The participants recognized that clear communication was essential to the provision of safe care. Fatigue is known to impair affective skills, resulting in higher levels of irritability and anxiety, as well as exacerbating mood disorders thus contributing to less effective communication (Baldwin & Daugherty, 2004; Banks & Dinges, 2007; Rogers, Hwang & Scott, 2004a; Rogers, 2008). In the Papp et al. (2004) fatigue model, job performance effects including effects on professionalism identified that fatigue impairs interactions with patients and families, as the medical residents were prone to inattention, abruptness, and less patience. The effects on professionalism also included impaired interactions with staff, with examples of 'crankiness', and 'snappiness' given (Papp et al., 2004).

5.2.2 a) With Patients and Families and Within the Healthcare Team

Challenges the participants identified as related to fatigue when communicating with patients and families included having less patience, and more impolite, less effective interactions. Such challenges can impact the nurses' sense of satisfaction and pride in their work, and their ability to achieve the level of care they and their coworkers identify as acceptable.

When you are tired, things like, educating your family, educating your patient, are going to go by the wayside. Because your head is just so….exhausted…that you're not going to spend the time, doing that kind of activity. You're not going to want to word search as your trying to explain things to them. (Iris)

Participants described the normal pattern of communication with each other in the critical care environment as very direct. This direct pattern of communication between staff was identified by participants as a tactic to help minimize misinterpretations and expedite prompt, safe care. High acuity complex settings such as critical care and emergency offer unique challenges to communication. Communication is impeded by the frequency of rapid decision making involving multiple caregivers, often with incomplete information and with multiple interruptions, all while simultaneously performing multiple tasks. The resulting high cognitive load is associated with increased errors (Laxmisan et al., 2007). One method of trying to reduce the risk of errors is the use of direct communication with clear messaging.

When you are inside of the ICU, everything is just cut. There's no fancy way of saying anything. It is very directly. It is very 'to the point'. (Anne)

The participants explained how fatigue can result in deterioration from direct communication to abruptness or intolerance. As well, there was an increased tendency to misinterpret what was said, as fatigue increased the level of sensitivity to a comment perceived in some way as offensive.

Fatigue definitely negatively impacts our relationship with each other…You're short, you're irritated… (Anne)

5.2.2 b) Impaired Ability to Give Report to Oncoming Staff

The nurses highlighted one particularly challenging adverse effect of fatigue as the decreased ability to give a comprehensive end-of-shift report to the day shift nurse.

End-of-shift reports are a process of exchange of patient information and transfer of responsibility between healthcare professionals to promote safe continuity of care (Johnson, Jefferies & Nicholls, 2012; Scovell, 2010; Staggers & Blaz, 2012). These exchanges can take many forms, but in the critical care setting, they are usually direct verbal bedside reports. Information passed from one critical care nurse to the next includes knowledge about the patient's current status, the evolving clinical picture, what 'works' for the patient, what other care providers will need to know, and the patient as a person and family member (Edwards & Donner, 2007). End-of-shift reports also provide an opportunity for shared problem-solving between the nurses, to 'think out loud' and 'build a case' for care processes (Edwards & Donner, 2007). Sharing the report may have a cathartic effect for the nurse leaving the work environment, as the opportunity is provided to share the emotional work of the challenging environment with a peer. It also provides an opportunity to monitor quality and peer review the work of each other, as well as learn from each other (Scovell, 2010).

The participants of this fatigue study identified three factors that may contribute to the difficulty in giving report at the end of a night shift. First, they attributed their impaired ability to give comprehensive reports to the effects of fatigue on their ability to think clearly and organize their thoughts.

> *By the time report comes around, I can't even put a sentence together, I'm that fatigued.* (Soup)

Second, they identified that possibly the awareness that a rested, alert nurse was present and accepting responsibility for patient care may have resulted in a lowered sense of responsibility. This partial release of responsibility may remove part of the internal

drive to maintain arousal and function; the knowledge of 'being responsible' may have served as a transient alerting factor to a fatigued nurse (Smith et al., 2007).

> *As tired as you may be, I find I can get through... until I'm about halfway through report. And then it's like ...'okay, did I just say this already or not?'. It's like control, you have handed over to somebody that is now sharper, and the mind starts to shutdown. You get halfway through and it's like, the responsibility is no longer yours, so you start doing the head bob.* (Focus Group)

Third, the nurses identified how the increased general noise and confusion level in the ICU associated with the arrival of morning staff, exchange of greetings, multiple reports going on at once, alarms sounding, while simultaneously providing ongoing nursing care served to further distract and compromise their ability to concentrate and give report. When rested, this level of noise and confusion seemed to go unnoticed. But when fatigued, it added to the challenge of concentrating and giving a comprehensive patient report.

Patient handovers have been recognized as a process that can significantly impact patient safety. The World Health Organization (WHO) has identified patient handovers or reports as a priority patient safety problem (WHO, 2006). End-of-shift reports are a time of important transition in nursing, with nurses not assuming patient care responsibilities until this process has been completed (Scovell, 2010). Reports can take a significant amount of time, with reports in the ICU of this study estimated at 15 to 30 minutes for each shift change. In many organizations including the hospital in this study, report time is unpaid nursing service, as there was no handover time built into the shift (Scovell, 2010). The expectation that nurses provide unpaid service at the beginning and end of each shift was reported in the CNA/RNAO (2010) fatigue and patient safety survey, and identified as an integral component of the nursing culture as nurses recognize report as

necessary for safe care. This highly critical component of nursing care remains unvalued, unrecognized and therefore unpaid (CNA & RNAO, 2010; Scovell, 2010). The participants identified that end-of-shift report was a troublesome time in their night shift, as they were aware of the impact of fatigue on this process of end-of-shift report and this fueled their concern for patient safety. This reflects their recognition of the importance of this shift transition and the implications of a poor quality report. The information being passed along is summative and complex, requiring a command of cognitive abilities. It has been well-established in the extant literature that fatigue results in diminished neuropsychological functioning and the ability to communicate. Complicating this process of end-of-shift report is the chaos in the ICU at morning shift change. Noise is known to be a significant and frequent stressor in the ICU work environment (Sawatzky, 1996).

5.3 THE EFFECT ON NURSE SAFETY: THE FEAR OF THE DRIVE HOME

> *I'm always scared…because sometimes I do feel like I'm going to fall asleep while driving.* (Anne)

Although fatigue has been shown to be associated with a number of safety concerns and increased injuries in the workplace, the greatest concern expressed by the participants of this study for their own safety was managing the drive home after night shift; this concern was embodied in the feeling of fear. Regardless of the length of the drive, all participants struggled to remain alert. The participants described with stark clarity, frightening experiences of driving when fatigued.

> *There are people at crosswalks, that you barely see and you just miss them. Or you go through the crosswalk and then see them afterwards. And sometimes you drive home, and think…'how'd I get home?'.* (Soup)

I wouldn't remember part of the drive home. You'd get in the driveway…okay, the car seems fine, but did you cause an accident? You have that doubt in your mind. Just because I didn't hit anything or do anything, does that mean I didn't cut someone else off and cause an accident and keep on driving? (Jigger)

[Coworker's name] was driving home and all of a sudden the police came up behind her with the lights going. She pulled over and they get out and came to the window, and she said 'hello', they said 'you're a nurse, aren't you?' And she said 'how do you know that?' 'Cause you just threw your quarters at the last stop sign.' She thought she was going over the toll bridge. (Focus Group)

Participants explained how fatigue resulted in 'a battle to stay awake', and a lack of awareness of the surroundings in the driving environment, impaired assessment of risk, delayed reaction time, and a loss of memory of driving home. Considering the fatigue-related neurophysiological impairments described in the literature including slower reaction times, reduced vigilance, and impaired information processing, an increased incidence of accidents is not a surprising finding. This becomes even less surprising if it is considered that many nurses drive home with a fatigue-impaired neurobehavioral performance level comparable to a blood alcohol level of 0.10% (Dawson & Reid, 1997). Driving is a sedentary task with little physical stimulation yet demands a high degree of vigilance. In a 2011 survey of 4614 nurses, respondents identified a fear of a fatigue-related car accident after night shift as one of their top health and safety concerns (American Nurses Association [ANA], 2011).

A number of studies have identified the increased risk of motor vehicle crashes after or during a night shift. The bulk of these studies have been in the transportation industry with professional drivers. There has also been increasing recognition of fatigue-related motor vehicle accidents in medical residents, with as high as a six-fold increase in

accidents after night shift than day shift (Steele et al., 1999). The Papp et al. (2004) study of the effects of fatigue among medical residents identified the negative impact of fatigue on driving ability, with descriptions of "being fearful about driving while cognitively impaired by sleep loss and fatigue" (p. 400). They also identified an inability to recall the drive after arriving home. These descriptions of fatigue-impaired driving mirror those provided by the participants in this fatigue study.

An early quantitative study identified the high incidence of fatigue-related motor vehicle accidents in nurses working rotating shifts (Gold et al., 1992). A more recent quantitative study involving 895 participants identified the high incidence of drowsy driving in nursing (Scott et al., 2007). A study of Australian nurses found that nurses experienced extreme drowsiness or a near accident on average one of every four night shifts worked (Dorrian et al., 2008). In a qualitative study of 45 critical care nurses, Novak and Auvil-Novak (1996) identified their most significant finding as the high incidence (95.5%) of accidents and near-accidents while the nurses were driving home after a night shift.

There has been even less research exploring the personal safety concerns for night shift nurses beyond the increased incidence of motor vehicle accidents even though night shift workers have been shown to be three times more likely than day shift workers to be injured in work-related accidents (Swan, Van Amelsvort, Bultmann & Kant, 2003). In studies of medical interns, risks including percutaneous injuries and body-fluid exposures have been identified as increased when fatigued, with the incidence of scalpel or needle-stick injuries twice as high on night shift as day shift (Ayas et al., 2006). The chronic sleep deprivation of working long hours with rotating shifts, combined with the acute sleep deprivation of being up all night, results in diminished vigilance, and impaired

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cognitive and motor function, increasing the risk of percutaneous injuries (Ayas et al., 2006). The only risk to personal safety identified by the participants of this fatigue study was their fear of the drive home; would they arrive safely and not cause any accidents resulting in injury to another person? When asked in the focus group about other personal safety concerns, for example, percutaneous injuries, the group reiterated their strong concern for safety when driving while fatigued, and did not identify any other risks. Nurses may be at a lower risk as they appear to be comfortable with the majority of the psychomotor skills that they perform, whereas residents are often less familiar with the skills as they are in a learner role.

5.4 SUMMARY

Overwhelming, this study illuminated how night shift fatigue resulted in the nurses concern for safety, and this concern for safety was embodied in the emotional response of fear. This concern encompassed patient safety, personal and public safety while driving home. The nurses described how, although fatigue affected them physically and mentally, it was the mental affects that they identified as most threatening. The fatigue-related mental impairments restricted their neuropsychological functioning and their ability to communicate, both of these abilities essential to the provision of safe care. Additionally, the nurses recognized the impact of fatigue on their ability to drive home after a night shift.

CHAPTER 6   FACTORS INTERWOVEN IN THE EXPERIENCE OF NIGHT SHIFT FATIGUE

6.1 INTRODUCTION

The second theme identified in the interviews and the focus group with the critical care nurses revolved around factors that contributed to and were interwoven with the experience of night shift fatigue, and thereby contributed to the fear that fatigue would impact safety. These factors that surfaced during the interviews helped explain how the nurses were situated and temporally located, contributing to the understanding of their experience. This encompassed factors within the nurses themselves, such as age, health and competing personal demands as well as external factors within the work context, such as increasing workload and responsibilities.

6.2 THE NURSE: AGE, HEALTH AND PERSONAL LIFE DEMANDS

The participants were an experienced group of critical care nurses, with seven of the eight participants being 41 years or older. The group described how their concerns about the impact of general fatigue and night shift fatigue were growing with increasing age. There were varying reports of the impact of age on sleep habits. A number of nurses reported that they don't sleep as well as they age; they woke more often and the quality of their sleep was diminished. Conversely, some nurses reported that with age, they were either better able or more apt to rest or sleep prior to night shift; they recognized the importance of sleep on their ability to function at work and in their personal lives. The one younger participant (20 to 30 year old age range with 2 to 5 years of nursing experience) described that she also experienced fear related to fatigue, very similarly to the older nurses. She voiced very similar concerns about ageing and fatigue, as her

mother is a nurse and she was well aware of the synergistic relationship. The more experienced participants recalled significant levels of fatigue and concern about patient care when they were younger which would suggest that fatigue is of concern regardless of the age. Additionally, the experienced nurses identified that fatigue may pose unique challenges to nurses less experienced in the critical care setting, regardless of age. A less experienced nurse would be less confident and assured in his/her abilities. Adding the impairment of fatigue would increase the potential for adverse effects of fatigue.

> *I am more tired these days, whether it's a twelve hour day, a twelve hour night. I'm more tired at work, and more tired in life.* (Boo)

> *I'm much less able to work nights. Like two nights in a row, if I can at all avoid it, I will. And I've worked 15or16 years of permanent nights.* (CL)

Three of the eight participants rated their general health as "excellent" and five rated their health as "good". Through the interview process, the nurses discussed a few health conditions that impacted how they experienced fatigue, although this was not a central focus of the story of their experience. The health challenges identified included:

- previously untreated sleep apnea impacting rest

- medication use causing increased frequency of urination and interrupting sleep

- increased sleep and rest needs related to pregnancy

- possible effect of menopause on rest needs and sleep quality

The focus group discussion about the factors that impacted the experience of fatigue included how events and circumstances in one's personal life can augment the experience of fatigue at work. One nurse described how after many years of working shift work, it was the responsibilities and concerns related to having an ill family member that highlighted the impact of her personal life on her work life and the resulting fatigue. The

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additional personal life demands forced her to recognize the fatigue related to shift work, and to adopt new strategies to manage the fatigue.

The nurses did not describe age as a linear progression of time, but rather how age related to their experience of fatigue and health. This is consistent with Benner's description of temporality as one of the sources of commonality when exploring experience in interpretive phenomenology (1994a). The participants' discussions of ageing reflected that they viewed the normal growth and developmental changes of time passing as interwoven with the ability to maintain their expected level of performance and personal commitments. Ageing impacted how they experienced fatigue, and required additional consideration of strategies to reduce the potentially augmented impact of fatigue. This was particularly important as they considered their future in nursing and personally. They recognized that to successfully achieve the level of performance needed in their work setting, and maintain their personal and social commitments, they had to deliberately manage their fatigue. Although healthcare organizations and professions have been slow to recognize fatigue, the stories shared by these nurses highlighted that the issue of fatigue can no longer be ignored. The reason the study participants succeeded was because they had been conscious, creative and communally supportive with regard to fatigue management.

The interrelationship of ageing and health with fatigue is a very relevant concern for the ageing female nursing workforce. The average age of Canadian nurses is 45 years old, very similar to this study sample (Canadian Institute for Health Information, 2009). Nursing is described as a "physically, emotionally and mentally challenging profession", with high workloads and demanding environments increasing the risk for illness and injuries (Gabrielle, Jackson & Mannix, 2007, p. 317). Although at middle age most

people are in good health, this is a period of life that can be marked by many health changes such as the onset of chronic illness. For nurses who are predominantly female, associated age-related changes include peri-menopausal and menopausal symptoms (including insomnia, weight gain and mood changes) (Gabrielle, Jackson & Mannix, 2007).

Additionally, this is also a time of life when many women's role as caregivers in their personal lives expands to include caring for ill and/or ageing family members. Throughout history, there has been a gender-based division of labour, and women have traditionally been responsible for the care of children, the ill, and domestic work (Armstrong & Armstrong, 2004). From a phenomenological perspective, it is important to understand how the nurses are situated both historically and currently in particular, to understand the shared meaning of cultural expectation(s) that nurses will assume caring roles in their personal lives (Benner, 1994a). Two of the eight participants identified having a caregiver role for either an ill spouse or parent, and one participant described a past experience that demonstrated the impact of caring for an ill family member on her overall fatigue level. As care work is perceived to be women's work, nurses are frequently expected to take on the additional burden of care work outside their workplace, referred to as double-duty caring. The expectation that the 'nurse in the family' will naturally take on a caring role results in a blurring of professional and personal boundaries that can significantly impact the caregiver's level of stress and fatigue (Ward-Griffin, 2004; Ward-Griffin, Brown, Vandervoort & McNair, 2005).

The increased impact of fatigue on the participants' lives as they aged is in keeping with the literature (Sack et al., 2007). A number of studies have shown that nurses' ability to adjust to constantly rotating schedules diminishes with age, particularly

between the ages of 40 to 50 years (Muecke, 2005). In a feminist qualitative study by Gabrielle, Jackson and Mannix (2007), nurses aged 40 to 60 years identified the 'aches and pains of ageing' as a major concern. Signs of ageing included peri-menopause, menopause and chronic illness. Ageing resulted in excessive tiredness which made shift work difficult; the sleep deprivation of nursing negatively impacted healthy ageing, and it took them longer to recover from night shifts (Gabrielle, Jackson & Mannix, 2007).

The awareness of the synergistic nature of ageing and fatigue does not negate the impact of fatigue on younger nurses however, as there is evidence to support the negative impact of work-related fatigue on young nurses. This may be due, in part, to inexperience and the complicated process of establishing expertise. An experienced or expert clinician may operate at a higher level of reasoning with some of the basic principles internalized from nursing experience. A less experienced nurse, or a novice, may be less able to draw on experience to reach decisions while trying to manage the large volumes of information in the critical care setting (Benner, 1984b). As fatigue impairs one's cognitive abilities and higher-level thinking, performance sometimes falls to "'performing by rote' … as opposed to 'thinking intellectually' when caring for patients" (Papp et al., 2004, p. 398). The limited clinical expertise and familiarity of a less experienced nurse limits the ability to compensate for fatigue by 'performing by rote'. Additionally, younger nurses may not have had an opportunity to learn some of the strategies known by more experienced nurses to reduce shift work fatigue (Winwood, Winefield & Lushington, 2006).

6.3 THE CONTEXT: INCREASING WORKLOAD AND RESPONSIBILITY

The participants described the impact of changes in unit workload and responsibility on their level of fatigue over their nursing career. The temporality of the

experience of increasing workload with fewer resources was described as furthering nurse fatigue, both physically and mentally. The additional responsibility on senior nurses of a growing workload plus a changing ratio of experienced to inexperienced nurses was described as adding to fatigue. It was also noted that the difficulty getting vacation and statutory holiday time-off impacted overall fatigue. These changes in the work context and their relationship to fatigue, along with the need to maintain safety and go beyond that to provide the level of care personally and communally acceptable, was described as a meaningful experience of temporality. The nurses compared current practice to past, and hypothesized about the future. Understanding such work factors as workload and responsibility illuminated how the nurses are situated.

> *Now, it is busier, I'm finding. It's heavier. There are less resources. There are less people. Before, every patient had a nurse. Now you're running. Maybe two of the nurses have two patients.* (Iris)

> *The biggest thing is staffing. If you go in there and you're double-doubled, or triple-doubled, or whatever, and you have a young staff, and you're the one they're coming to constantly. You're definitely fatigued by the end of 3 hours, let alone 12 hours… You're really thinking for the entire unit, really…* (Soup)

During the focus group, the participants discussed the increasing expectation to do organizationally-required learning on nights or on the nurses' personal time. There was little support staff available in the unit on nights, and any attempts to cover learning material was impeded by interruptions. This was described as an ineffective way of learning for two reasons. One was that it increased the demands on the staff as they tried to accommodate this education in the time-restricted work environment. Second, there was a resounding consensus that night shift was not conducive to learning as the participants were unable to recall the material they had reviewed later.

You have no support staff. You're doing the ward clerk's stuff. You're doing the aide's stuff. You're already pulled to the max. You're covering sometimes two patients in addition to your own. And then you're expected to do this learning stuff? It's not downtime; nights are not downtime. (Focus Group)

I retain it for as long as I need to push a button, but I wouldn't remember an hour later or the next day. It'd be like 'I've heard that before' but wouldn't be able to recall the details. (Guy)

A number of factors have increased the demands on nurses to accommodate the bulk of their work-related learning in the midst of patient care responsibilities. Limited financial resources impact the amount of paid education time and the availability of direct bedside educational support. Additionally, it becomes more and more difficult to schedule nurses for paid education time as managers struggle to maintain minimum levels of staffing. Compounding this problem is the rate at which care delivery changes are occurring that nurses must keep abreast of. The participants explained that the expectation that they cover much of the learning while working nights was flawed. There seems to be a false assumption that there is more time on night shift, which the nurses challenged. Additionally, the cognitive impairments of fatigue make complex thinking and recall difficult. Similarly, the medical residents studied by Papp et al. (2004) identified a detrimental effect of fatigue as being the impediment on their ability to learn, impairing "short-term or long-term acquisition of cognitive or noncognitive material" (p. 397). Congruently, Owens identifies the implications of fatigue on quality professional education, as fatigue results in "decreased retention of information, impaired information processing, and decreased motivation to learn" (2007, p. 96).

Fatigue and workload are intricately related. In a 2011 survey of 4614 American nurses, the top health and safety concern identified was the acute and chronic effects of

stress and overwork (ANA). In a 2010 survey of 6312 Canadian nurses, the top five factors contributing to nurses' fatigue were "increased workload, working short staffed, increased expectations from patients and families, high levels of patient acuity and unexpected emergency with staffing or patients", with contributing factors of "sensory overload" and "relentless change in the workplace" (CNA & RNAO, 2010, p. 19). The Canadian nurses described organizational cultures as supporting an approach of "'doing more with less' and without complaint", and pointed-out that this organizational response was unresponsive to the nurses' experience of fatigue (CNA & RNAO, 2010, p. 24). The participants in this thesis study echoed many of the issues in the national study. Factors identified in this thesis study as adding to the growing workload and creating a situation that augmented the concern for fatigue, included; fewer staff, more inexperienced staff with fewer nurses to mentor them, reduced support services, additional paperwork, more educational material to be covered while working, higher acuity patients, and an increasing number of bariatric patients. This placed the nurses in a situation where they are barraged with continuous demands. There is increasing responsibly without increasing resources and limited autonomy over nursing practice, in a hospital hierarchy that often limits potential, leaving nurses struggling to maintain the level of care that they believe the patient requires (Duchscher & Myrick, 2008).

> It does, all that stuff (paperwork) does take away from the time you're spending
> with the patient… So of course, it's going to somehow effect the time you're
> spending with them, so you can always be there and be the vigilant nurse …
> (Veno)

6.4 SUMMARY

This second theme identified helps to illuminate the nurses' experience of night shift fatigue and their fear of the threat of fatigue on safety by identifying some of the factors that contributed to the experience. By understanding factors both within the nurses themselves and factors within the work context, dimension is added to the experience. This understanding of how the nurses are spatially and temporally located reflected some of the strains on the nurses. This understanding further illuminated the nurses' overarching concern for safety, as embodied in the emotional response of fear.

CHAPTER 7   REDUCING NIGHT SHIFT FATIGUE

7.1 INTRODUCTION

The third theme identified in this study of critical care nurses' experience of night shift fatigue related to how the nurses reduced the impact of night shift fatigue on patient safety and their personal safety, thereby reducing the embodied response of fear. This chapter will give an overview of this theme, including a discussion of how strategies were learned. The strategy clearly identified as the most effective was the use of workplace napping. Workplace napping was a strategy that reduced the fear of the impact of fatigue in the workplace and on the drive home. Other strategies that the nurses have used to reduce the impact of fatigue will also be discussed.

7.2 HOW STRATEGIES ARE LEARNED: THE PERSONAL / ORGANIZATIONAL IMBALANCE

The nurses in this study described strategies they utilized to reduce the negative impact of night shift fatigue, and how they have learned these strategies. All of the participants stated that they could not recall discussions of how to cope with shift work or manage fatigue in their nursing education. A number of the participants did note though that their basic nursing education was quite a number of years ago and they may not accurately remember the details. Most participants responded to the discussion about what they had learned about fatigue management in nursing education with laughter, and comments reflected the absurdity of not including fatigue management in nursing education, as the 24 hour nature of healthcare requires that most nurses work shift work all or part of their careers and it has a profound impact on safety.

Oh my goodness…are you crazy? They didn't even tell you that you'd be doing shift work for crying out loud. I mean they did, but…there was no education as far

as how you're going to handle this, what you're going to do, like what night shift is…it was just like….'oh yeah, eventually you're going to do that', not, 'how are you going to handle that??' It wasn't even talked about! (Veno)

The participants described learning strategies by observing others and by trial-and-error. This lack of shift work education provided to healthcare professionals is consistent with the literature. Respondents to the CNA/RNAO (2010) fatigue and patient safety survey identified that nursing students need to be better prepared for shift work. This would include an understanding of "the impact of fatigue on patient safety, nurse satisfaction, burnout and retention" (p. 28). The literature reflects that rather than being supported through their education, their profession or their employers, and rather than using an evidence-based approach, nurses and medical residents use a trial-and-error approach to discovering strategies to cope with fatigue (Colten & Altevogt, 2006; Stokowski, 2013; Novak & Auvil-Novak, 1996; Stoller et al., 2005).

The lack of shift work education provided to healthcare professionals during their training or in the workplace is consistent with the notion that dealing with fatigue is a personal, rather than a professional or organizational responsibility. This personal level of responsibility is repeatedly highlighted in studies of medical residents and nurses. Comments in the literature reflected that fatigue was a 'given' with the job, with a "just do it" attitude voiced by nurses (Gallew & Mu, 2004, p.26) and coping by "powering through" attitude of residents (Stoller et al., 2005, p.7). Undoubtedly, this notion of being personally responsible for fatigue is related to a tangling of historical influences in healthcare (Papp et al., 2004). Long hours and personal sacrifice have traditionally been hallmarks of medical residency (Papp et al., 2004). As well, the assumption that nurses will selflessly sacrifice themselves to care for others has been central to the historical

gender-based division of labour and subsequently central to nursing as a female-dominated caring profession. Nursing is situated within the societal and organizational cultures that have been shaped by patriarchal forces, and that continue to influence women and nursing (Armstrong & Armstrong, 2004; Street, 1995). Consideration of historical roles in healthcare helps to understand how the nurses are currently situated (Benner, 1994a). The conflict of the historical expectation and the evolving need to reduce the impact of fatigue reflects that it is time for this notion of sole personal responsibility to be challenged in light of what is known about fatigue.

The notion of fatigue as a personal responsibility, rather than a shared personal, professional and organizational responsibility is very unlike the approach adopted in many other 24 hour industries with a low tolerance for high risk errors, such as aviation, nuclear power, rail and road transportation, mining, petrochemical and refining industries (Lerman et al., 2012). Some of the world's worst disasters have been linked to night shift fatigue, including Three Mile Island and Chernobyl nuclear catastrophes, the space shuttle Challenger explosion and the Exxon Valdez environmental disaster (Ker et al., 2009; Surani & Murphy, 2007). Fatigue is recognized as an unsafe workplace condition and many male-dominated industries have actively adopted fatigue risk management systems (Lerman et al., 2012). But despite the known threat of fatigue to patient and caregiver safety, healthcare lags behind in terms of proactively supporting programs to facilitate care delivery by well-rested employees (Lerman et al., 2012).

In keeping with the notion of personal responsibility, most nursing publications about managing night shift fatigue describe individual strategies, such as, suggestions for organizing personal lives, strategies to improve sleep at home, the use of pharmaceutical agents for rest and stimulation, and the use of light therapy. Many of these publications

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do not allude to the shared responsibility for fatigue management among healthcare organizations, professional bodies and individual healthcare professionals. A 2004 Institute of Medicine (IOM) report challenged healthcare organizations to acknowledge the threat of fatigue to patient safety, and to implement fatigue management programs for nurses, highlighting that fatigue is an unavoidable physiological occurrence, and not a weakness in the commitment of healthcare professional to their job (IOM, 2004). Consideration of the changing and conflicting understanding of the impact and responsibility for fatigue management may help to understand the common experience of the nurse participants (Benner, 1994a) and move us closer to resolution of this systemic problem.

Action to build a fatigue awareness culture within healthcare has been slow. The first nursing implementation study of a fatigue management program was in 2010 (Scott et al.), and was based on the principle that fatigue management is a joint responsibility of the individual and the organization (Rosekind et al., 1996; Scott et al., 2010a). One of the first steps in acknowledging and normalizing the impact of fatigue on healthcare professions and healthcare organizations is to realize that we are not immune to the effects of sleep loss, and that fatigue is an unavoidable outcome of sleep loss, not a flaw in the care provider (Beyea, 2004; Papp et al., 2004; Stoller et al., 2005). For the nurses in this study, managing the threat of fatigue must be addressed without the support of organizations or professions. This severely limits how successfully nurses can address the concern for safety and reduce the fear something untoward may occur. This leaves nurses with limited control over professional lives within organizational hierarchies, to address the sociocultural norm of fatigue as an individual weakness.

7.3 WORKPLACE NAPPING: "IT MAKES A BAD SITUATION BETTER"

The participants' descriptions of their experiences using workplace napping overwhelmingly focused on the restorative nature of the nap on their mental capacity and ability to 'think straight'. The narratives reflected that nurses were aware of the literature demonstrating the negative effects of fatigue on their personal health and their mental capacity, and the increasing acknowledgement of fatigue as a cause for concern in other professions and industries.

> *It's just that studies keep showing, repetitively, that this is such a beneficial thing. That if you are more rested, you are more productive, which is what institutions like to hear. Just your potential not to make mistakes, it's well documented. Look at some of the nuclear accidents that have happened, Chernobyl, Three Mile Island. These are happening at 3 or 4 o'clock in the morning because people are deprived (of sleep); airline pilots that make judgment mistakes, flying long distances and overnight and changing time zones.* (Jigger)

The participants described both the benefits of napping on their ability to provide safe nursing care and to safely drive home after the night shift. The benefits as described by the participants included:

- the ability to think more clearly, improved organization of thought

- improved critical thinking skills

- improved patience, with patients and families, and coworkers

- improved memory of events at work and on the drive home

- addressing the increased fatigue associated with ageing

- reduced fear/uncertainty of clinical errors in patient care

- reduced fear of an accident on drive home

Having … at least 30 minutes of sleep time on a night shift, makes a world of a difference, as far as concentration, alertness, my ability to focus, and I feel like I provide better care really… It's just like you almost started the shift again. It really makes that much difference to me. (Anne)

I am awake. When I get up after that break, I am awake. I could probably go another 4 or 5 hours, if I had to, that's how awake I am. By driving home, I'm tired but I'm not half as tired as when I didn't nap. (Soup)

Research has highlighted how napping on night shift can aid the management of fatigue and improve critical task safety, although studies within the nursing literature are limited. Participants' comments were reflective of the current knowledge of the restorative effects of workplace napping. Additionally, participants indicated that napping could have a moderating effect on the long-term negative effects of night shift fatigue. This notion is supported in the literature by the proposition that the use of workplace napping may have long-term positive effects on the circadian cycle and may moderate the negative biological outcomes of circadian disruption and sleep debt (Bonnefond, Tassi, Roge & Muzet, 2004).

The key message communicated by the participants was related to the degree of importance placed on the use of workplace napping. The use of workplace napping was identified as the strategy that made the fear of the impact of fatigue on the patient and on the nurse while driving home, manageable. Workplace napping reduced the potential of fatigue to harm a patient, or to harm the nurse or public while driving home. Workplace napping supported the maintenance of the required level of alertness and safety, reducing the fear that fatigue would negatively impact safety to a level found more acceptable and manageable for the nurses.

7.3.1 SLEEP INERTIA: "SHAKE OUT THE GROGGINESS"

A factor identified in some literature cautioning the use of workplace napping is the possible detrimental effects of sleep inertia. Sleep inertia is a short period of impaired alertness immediately upon waking, which usually dissipates within 10 to 15 minutes (Lerman et al., 2012). The potential impact of sleep inertia on the nurse and the workplace was discussed with each participant. It was described as a feeling of 'grogginess' immediately upon waking from a nap. Participants described experiencing varying degrees of sleep inertia, with no participant identifying that sleep inertia should be a deterrent to the use of workplace napping.

> *It takes me a minute to wake-up. But as soon as I'm up and moving, I'm awake.* (Soup)

There is conflicting evidence about the impact of sleep inertia and its relationship with duration and timing of napping, arguably as a result of small sample sizes (Fallis, McMillan & Edwards, 2011). In a meta-analysis by Driskell and Mullen (2005) sleep inertia was not found to be a concern. The authors concur with Rosekind et al (1995) that if sleep inertia were to occur, it is balanced by the overall performance improvements offered by the nap. The benefit of several hours of increased alertness after a short nap outweighs the potential short period of grogginess immediately following the nap (Dean, Scott & Rogers, 2006). The hypovigilance associated with sleep inertia is not lower than that observed if no rest period is taken (Bonnefond, Tassi, Roge & Muzet, 2004).

Some literature suggests that night shift napping can be best implemented if a sleep inertia recovery period is incorporated into the nap break (Fallis, McMillan & Edwards, 2011; Kubo et al., 2010; Smith-Coggins et al., 2006). The participants of this fatigue study described that they and most of their coworkers had a routine that

accommodated for sleep inertia. They planned for recovery from sleep inertia in their break time by getting up before they needed to be back at the bedside. They allowed themselves five to ten minutes to 'clear their head', 'shake out the grogginess', and perhaps use the washroom, brush their teeth, get a snack or a drink. Other effective methods of stimulating arousal identified in the literature included the use of caffeine, bright lights, and face washing (Hayashi, 2003).

> *People are coming back 10 minutes ahead of time, and allowing themselves that time to get rid of, shake out the grogginess.* (Iris)

Also noted in the literature, is the possible impact of sleep inertia if a nap was interrupted by an emergency situation (Lerman et al., 2012). The participants identified that they have all had an experience of either being awoken from their nap or having to wake a coworker, because of a patient care emergency. All participants strongly expressed that sleep inertia did not impede their ability to respond to an emergency.

> *I can bolt out of the chair like nobody's business, and I think respond quickly and efficiently and not feel groggy.* (Iris)

> *Adrenalin kicks in and snaps you awake and away you go.* (Boo)

The 'fight-or-flight' response was first described in the 1930's by Walter Cannon. Within seconds, an emergency event activates the sympathetic nervous system to release adrenalin and noradrenalin, causing the characteristic responses of increased heart rate, respiratory rate, blood pressure, diaphoresis and heightened awareness. The stress response also activates the hypothalamic-pituitary-adrenal axis, increasing cortisol and subsequently blood glucose (Kemeny, 2003). Cortisol stimulates areas of the brain such as the amygdala, hippocampus and the prefrontal cortex, which are involved in cognition (LeBlanc, 2009). It is this physiological response that the nurses credit for being able to

afford them the cognitive abilities to respond to acute patient care situations when fatigued or when awakened from a nap.

7.4 WHAT ELSE HELPS? "JUST SLEEP"

That's what your body is absolutely craving. (Focus Group)

The participants resoundingly expressed that in their many years of nursing experience and trying different measures to manage night shift fatigue, they had found only one truly effective strategy, and that was napping. Given that workplace napping is such a strongly recommended strategy in multiple reviews and by multiple groups tasked with identifying fatigue management strategies, this was not surprising (Caldwell, et al., 2009; Jha, Duncan & Bates, 2001; Morgenthaler et al., 2007; Sack et al., 2007). Workplace napping has been demonstrated to provide "increased alertness and vigilance, improved reaction times, and decreased accidents during night shift work" (Morgenthaler et al., 2007, p. 1449).

7.4.1 STRATEGIES OTHER THAN WORKPLACE NAPPING TO HELP REDUCE WORKPLACE FATIGUE

The literature suggests a wide variety of additional individual-based fatigue management strategies. Stoller et al. (2005) used grounded theory to examine the strategies used by 149 medical residents. They categorized the range of strategies as chemical, dietary, sleep management, behavioural and cognitive. They highlighted that the sheer range of strategies used was a notable finding, along with identifying that although the residents were trained in evidence-based medicine, none of the participants described turning to the literature to find ways to manage fatigue. The nurse participants in this fatigue study described a number of individual-based strategies that they had tried

to help reduce fatigue. These strategies involved the pre-shift rest preparation, keeping busy at work, attention to nutrition, and input into scheduling.

Participants described strategies to prepare for night shift such as trying to get as much rest as possible prior to the shift by resting or napping in the afternoon before going to work. A number of participants explained that they increasingly needed to be attentive to rest prior to night shift as they aged. Many other studies identified the pre-shift rest or nap preparation as an important fatigue management strategy, with the potential to mitigate fatigue by limiting the degradation of alertness and performance (Gallew & Mu, 2004; Garbarino et al., 2004; Schweitzer, Randazzo, Stone, Erman & Walsh, 2006). The use of planned napping both before and during night shift is a strongly recommended strategy to improve performance and alertness by an American Academy of Sleep Medicine (AASM) task force (Morgenthaler et al., 2007).

> *Before I go in for my first night, I have a snooze in the afternoon for 2 to 3 hours, because I've already worked two days. I'm already exhausted... If I didn't, I probably wouldn't be able to work that night, honestly.* (Boo)

Another strategy identified as helping to manage night shift fatigue was to keep busy at work, as some participants found the constancy of the work as keeping them active in the work environment so that they didn't notice the degree of fatigue as much.

> *And if you're really busy like that, you don't get a chance to be tired, you just keep going and going, it's only until you slow down you realize ... I'm going to die.* (Guy)

The strategy of 'keeping moving' or 'keeping busy' was noted in a number of studies (Bonnet & Arand, 1999; Gallew & Mu, 2004; Stoller et al., 2005). Physical activity increases heart rate and sympathetic nervous system stimulation, thereby helping

to mask the sleep tendency. However, the effectiveness of physical activity to stimulate arousal does decrease with increasing sleep deprivation, as the stimulation of physical activity does not meet the body's need for rest (Bonnet & Arand, 1999). Activity breaks or postural changes with simultaneous social interaction can offer brief improvements in alertness. Although of limited effectiveness when compared to napping, this is suggested as an in-flight fatigue countermeasure by the Aerospace Medical Association Fatigue Countermeasures Subcommittee (Caldwell et al., 2009).

Attention to nutrition was mentioned by most participants as impacting their experience of fatigue. They described trying to eat well, with 'normal' types of meals. They promoted healthy snacks with lots of crunch to help keep alert, and limited the consumption of junk-food and order-out food. Minimizing soft drinks and drinking adequate water was also promoted as lessoning headaches and muscle tiredness. Dietary strategies which included the importance of healthy food choices and regular eating patterns were identified as an important strategy in the Stoller et al. study (2005), similar to the participants of this fatigue study. The American College of Occupational and Environmental Medicine's (ACOEM) Task Force on Fatigue Risk Management recommends a regular pattern of well-balance meals, with the main meal consisting of high-protein, complex carbohydrate, low-fat choices consumed around 1 am (Lerman et al., 2012). Scheduled healthy foods and fluids are associated with improved cognition and less glucose variability. Proper nutrition and drink is often challenging in hospital settings for a number of reasons including, the pace of the work not permitting nutrition breaks, limited access in the workplace, and a culture that places work responsibilities over nutritional self-care (Lemaire et al., 2010).

Depends on what I eat ... how I feel at night. If I eat fairly close to how I eat during the day, that helps. So I'll have supper around 10 to 12 ish, and then I'll have snacks for the rest of the night, healthy snacks. I find that something unhealthy makes me more fatigued. (Anne)

In the Stoller et al. (2005) study the most frequently mentioned countermeasure was the use of caffeine, with many describing how reliant they were on caffeine consumption. The use of caffeine is a common fatigue management strategy identified in both the qualitative and the quantitative literature, and identified as an effective stimulating agent to enhance alertness by the AASM (Gallew & Mu, 2004; Morgenthaler et al., 2007; Pallesen et al., 2010). The participants of this fatigue study described a limited use of coffee, with tea being more commonly consumed by some participants and some coworkers, perhaps in part related to an Atlantic Canadian cultural tendency of tea consumption. The Novak and Auvil-Novak (1996) study proposed that less experienced nurses depended more on caffeine to maintain alertness, while more experienced nurses limited their caffeine consumption as they were aware that it impeded their sleep after the shift.

It was identified, particularly in the group discussion, how shift work has negatively impacted overall eating habits and body weight. One participant described how nurses eat more meals than would seem necessary while working nights. She suggested that she eats to make herself "feel better", and enjoys "comfort foods". Although this did have a positive effect on how she felt while eating, it was a short-lived benefit. Others in the group supported this notion of seeking comfort in food when fatigued.

We eat to make ourselves feel better. You might be hungry initially, but not the amount of stuff we can pack back on a 12 hour night. And even when I get home, I

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have to get another meal in there too. I eat just because I want to feel better.
(Guy)

The notion of eating to stay awake, and of eating comfort foods or junk foods was a frequently mentioned strategy in the literature (Gallew & Mu, 2004; Novak & Auvil-Novak, 1996; Stoller et al., 2005). The unwanted weight associated with the additional snacking and meals has also been identified as an undesirable effect (Gallew & Mu, 2004; Novak & Auvil-Novak, 1996; Stoller et al., 2005). The participants of both the Stoller et al. (2005) and the Gallew and Mu (2004) study acknowledged that they were aware of the negative ramifications of such choices as poor nutritional habits and caffeine consumption on their health, but continued with the habits as they felt this, in some way, helped them manage fatigue.

A few of the participants also highlighted the importance of having input into their shift scheduling as a helpful strategy. Some noted trying to control fatigue and accommodate rest by limiting short turn-around time from nights to days and the number of nights in a row. The importance of having input into scheduling is repeatedly found in the literature. Nurses not only need to adopt a schedule that best meets their rest and sleep needs, but it is also an important work life issue as they accommodate family and social needs while working a rotating shift schedule; they need personal input when balancing the physical and social burdens of shift work (Kandolin & Huida, 1996; Ruggiero & Pezzino, 2006).

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7.4.2 STRATEGIES OTHER THAN WORKPLACE NAPPING TO HELP DRIVE HOME SAFELY

The consensus of the participants was that the most effective strategy to help decrease the negative effects of fatigue and their concern for safety while driving home was the use of workplace napping.

Another strategy identified as useful by one participant was carpooling. She and a couple of other nurses shared the driving on night shift as much as possible. The stimulation of having company and conversation was found to help increase wakefulness during the drive. Other strategies that the participants identified as being helpful to drive home safely included, rolling down the window, listening to a loud radio and sometimes singing, as well as snacking on crunchy foods, such as an apple, a granola bar, or dry cereal. The participants avoided coffee on the drive, as it would impact their sleep when they arrived home.

> *It's terrifying sometimes. I'll open the window, I'll have something to eat, I'll have the music on…. try to keep myself stimulated in every way.* (Anne)

> *I always have something in my car on my way home, either a granola bar or an apple, something I physically have to crunch.* (CL)

The ACOEM Task Force on Fatigue Risk Management provides recommendations about some of these strategies identified by the participants of this fatigue study (Lerman et al., 2012). Although noise has been shown to augment fatigue in the clinical setting, it may be stimulating in other circumstances such as the drive home. Stimulating noise includes the use of social conversations and music appealing to the individual, to help "ameliorate performance decline due to circadian cycle effects by increasing the general level of arousal", with its use supported in studies of motorists for

short-term enhanced alertness (Lerman et al., 2012, p. 247). Other environmental countermeasures such as increasing the ventilation by opening a car window have been shown to temporarily improve alertness (Lerman et al., 2012).

Helpful strategies identified in the Stoller et al. (2004) study of medical residents included pulling over to have a nap, turning up the air-conditioning or opening the window, playing loud music or singing, talking on their cell phone, and drinking coffee. In a large Ontario study examining the practices of fatigued and drowsy drivers, the most commonly used strategy was opening a car window or using the car's air conditioning. The study identified that stopping to take a nap was the most effective strategy, although it was infrequently used (Vanlaar, Simpson, Mayhew & Roberstson, 2008). In the discussion section, they point-out that drivers can not accurately judge how likely it will be that they fall asleep; if they wait until they feel fatigued or drowsy, they are already at increased risk of falling asleep at the wheel (Vanlaar et al., 2008). At this point, the driver is very apt to experience micro-sleeps, resulting in brief lapses into sleep without any subjective awareness of it happening or of what is occurring in the driving environment (Owens, 2007; Ross, 2008).

7.4.3 ABILITY TO COPE WITH FATIGUE IN HIGH ACUITY SITUATIONS

The nurses reported that no matter how fatigued, when something acute happened, they were able to 'push through' the fatigue and look after the patient. Repeatedly, the nurses described an experience of the 'adrenalin kicking in'. In the focus group discussion, the participants identified that this adrenalin kick could help them maintain some alertness and provide patient care. This seemed to be effective until they were giving report, or until they got in their car to drive home. At that point, the fatigue would

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become an overwhelming force, negatively impacting their ability to communicate report or drive safely home.

> *It's the shifts that are so busy, there are multiple admissions, the patients are sick, and we go flat out? You don't get half as tired. That adrenalin is going full-tilt…* (Focus Group)

This description of an 'adrenalin surge' or 'adrenalin kicking in' is supported by the experience of other nurses and medical residents in the literature. Papp et al. (2004) found that this was a commonly reported occurrence among residents that would allow them to accomplish what was necessary. This 'adrenalin kick' is related to the physiological response to an emergency event, when the sympathetic nervous system and the hypothalamic-pituitary-adrenal axis stimulation drives an increased responsiveness (Kemeny, 2003; LeBlanc, 2009). Additionally, it may be that this notion of 'pushing through' is related to the expectation that the nurses will place work responsibilities ahead of their own self-care needs. Nurses giving priority to others over themselves is entangled in the historical, gender-based division of labour associated with the profession (Armstrong & Armstrong, 2004; Street, 1995).

7.5 SUMMARY

The third theme identified in this study related to the strategies that the nurses used to reduce the impact of night shift fatigue on patient safety and their personal safety, thereby reducing the embodied response of fear. The participants described that similar to the literature, strategies were learned by trial and error, rather than formally addressed in education or rather than based on an evidence-based approach. The nurses described how, similar to the literature, fatigue was managed by individual approaches rather than organizational approaches to fatigue management. This situates the nurses such that they

are attempting to manage the multifaceted threat of fatigue as individuals, with a position of limited power within the hospital hierarchy. The nurses described a number of strategies used to try to reduce the threat of fatigue on safety within the workplace and on the drive home. The nurses resoundingly supported the most effective strategy to mitigate fatigue and reduce the fear of its threat, as workplace napping.

CHAPTER 8   THE USE OF WORKPLACE NAPPING: MULTIDIMENSIONAL TENSIONS IN CULTURAL BELIEFS AND EXPECTATIONS - NURSES, MANAGEMENT AND PUBLIC PERCEPTIONS

8.1 INTRODUCTION

In recent years, there has been more and more societal blending of personal and professional lives. Technologies such as cell phones, the Internet and email combined with an intensification of demands for productivity have further blurred the boundaries between work and private lives for many employees (Baxter & Kroll-Smith, 2005). Simultaneously, sentinel reports, such as the National Aeronautics and Space Administration and the Federal Aviation Administration (Rosekind et al., 1994) have identified workplace napping as a strategy to improve safety and productivity. The relationship between napping and sustained mental productivity has redefined the nap; the once taboo act of sleeping at work has become tolerated and is in many industries, an expectation. There has been a normalization of the private act of sleeping in the public work domain - "The workplace nap is moving, albeit in fits and starts, from its secret place in the catacombs of the workplace to a more open and tolerated, if not prescribed behaviour" (Baxter & Kroll-Smith, 2005, p. 46).

Healthcare remains at a different phase in this process of normalizing the traditionally private act of napping as an acceptable workplace practice. Although there are a multitude of well documented reasons to mitigate fatigue, napping remains an invisible and hidden practice across many nursing workplaces. Napping may be considered a covert practice perhaps because it is perceived as employee laziness or lack of commitment; working long hours, never resting, and pushing to achieve, remain

badges of honour by hard-working healthcare professionals (Owens, 2007). The new cultural attitude towards napping in other industries has been slow to infiltrate nursing because of misguided cultural norms.

The participants of this fatigue study indicated that the most important facilitator to their use of workplace napping was how the practice was situated within their work group, the acceptance of the practice within that group, and their experience of its effectiveness. The participants described how they perceived the use of workplace napping as a source of tension among nurses, management and the public. Acceptability of the practice was frequently viewed as in conflict with the role of nurses as there were incongruences in the common meaning of 'nurses' and 'napping'. As a result of firmly embedded sociocultural norms and expectations related to nursing and the use of workplace napping, the practice remains 'under the covers', viewed as a possibly illicit act.

8.2 WHY DID THEY TRY WORKPLACE NAPPING?

When describing what initiated them to try workplace napping, the nurses in this study reported that being situated in a workplace that supported its use was central to them trying it. Some tried workplace napping immediately when they started working in a setting that supported its use, while others resisted for a period of time, some even for years. When discussing why they initially hesitated, those participants described a number of reasons, including: a concern about grogginess upon waking and its potential impact on care; feelings of guilt about sleeping at work; a lack of awareness of how tired they actually were; and a lack of awareness of the positive impact of a workplace nap. Other factors that resulted in nurses trying workplace napping were a concern for the

long-term impact of night shift fatigue on their personal health as well as recognition of the increasing impact of fatigue stemming from other life events such as pregnancy, ageing and additional personal life demands. All of the participants reported that once they tried napping, they were struck immediately by the powerful positive impact on their experience of fatigue and the implications for safety.

> *I took a nap and I felt phenomenal the next morning. And I didn't realize how tired I was on night shift until I took that nap.* (Soup)

> *I tried not sleeping a few nights, and when I compared myself, how I felt physically and my mental capacity, when I slept and when I didn't sleep, they were absolutely, not even comparable ....how much more efficient and safe I was when I slept.* (Anne)

8.3 TENSIONS IN CULTURAL BELIEFS AND EXPECTATIONS – NURSES

8.3.1 TRADITIONAL CULTURE OF SACRIFICE / ROLE OF NURSES "IT'S WHAT WOMEN DO"

> *I don't know if it's the personalities that draw people into nursing, but they're very giving of themselves, and almost put themselves last. I would say, as a whole, women are expected to do more … They expect it of themselves, and our society expects it of them.* (Anne)

Nurses in this study highlighted how traditionally, nurses were 'not allowed' to nap; that the use of napping was perceived negatively by other nurses, management and possibly the public. The genesis of this view of napping as 'not allowed' was discussed, and thought to be related to the female-dominated culture of the profession and how nursing is situated within a biomedical, male-dominated, hierarchical work environment and patriarchal society. Nursing, as a female-dominated profession, has to 'sacrifice' itself to try to manage night shift fatigue without the use workplace napping. In the focus

group discussion, the participants described themselves as impacted by the 'double whammy'; society's expectations of women and society's expectations of nurses. They were expected to sacrifice or give at home, in the workplace, and in society. Sacrifice was described as an expectation of women and nurses.

> *It's what women do. And you put nursing on top of that; it's like a double-whammy for us.* (Focus Group)

> *For some reason, nurses aren't allowed…It's almost like it's back in the 1940's when you had to stay up all night… Sacrifice, that's the word I want. It's a sacrifice.* (Soup)

The traditional caring role of women is embedded within the role of nursing and within hospitals, with caring perceived as secondary to the biomedical emphasis on curative intent (Carpenter, 1993; Doering, 1992). Evolving gender roles in some segments of society have remained unacknowledged in the biomedical healthcare setting (Kazanjian, 1993). Caring remains women's work; "wherever care is provided, whether paid or unpaid, it is overwhelmingly women who provide it" and "much of the work and many of the skills remain invisible both in terms of the acquired nature of women's capacities and in terms of their contributions to health" (Armstrong & Armstrong, 2006, p. 175). The Gallew and Mu (2004) phenomenological study examining the temporal demands and adaptation of night shift nurses identified the traditional female role of women in our society as a caregiver and nurturer added to the struggle to maintain role fulfillment while working shift work. They described the difficulties experienced trying to fulfill the role of the female nurturer and caregiver at work and at home, and putting their own needs last. We often fail to appreciate the magnitude of the sociocultural political forces at work and how they influence and control women's personal and professional

lives. These norms, values and beliefs reinforce the expectation and value of the qualities of selflessness and altruism in women (Street, 1995).

The participants in this study clearly recognized that nurses are at the epicenter between contextual forces and tensions that restricted the use of workplace napping, and led to the covert nature of the practice and its perception as illicit. At the same time, they noted how being situated within a supportive work group was key to the successful use of workplace napping as a fatigue management strategy. A small number of participants expressed that the culture of nursing and the culture of safety may be changing to accept the practice of workplace napping given the increasing research in support of its benefits. However, they identified that there continues to be many nursing workplaces where napping is an unacceptable practice. Participants spoke of their lack of appreciation of the positive impact of workplace napping on their fatigue level until they tried it. They suggested that some nurses and workplaces that opposed it, may simply underestimate its potential. Additionally, it may be difficult for individuals within these groups to practice workplace napping individually as there may be limited group flexibility within the staff to manage break schedules to accommodate for naps.

> *The culture has changed a little bit and it's more acceptable, and I resisted that for quite a number of years.* (Iris)

> *I think the whole culture of nursing (is changing).They realize patient safety is at risk. It's just unacceptable.* (Jigger)

Discussions with the nurses also highlighted that some nurses may respond negatively towards workplace napping, as many workplaces within the organization do not have adequate staffing levels for the nurses to take breaks on nights. The participants described nurses' inability to take a break on night shift as an unacceptable practice that

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has been allowed to continue without acknowledging its greater implications for nurse and patient safety. Unfortunately, this lack of ability to take a break from patient care responsibilities is far too common. One study estimated that nurses were taking breaks less than half of the shifts they worked (Rogers, Hwang & Scott, 2004b).

> *But I think really, that is a staffing issue in general. Because really, if you're not taking your break, every single shift, day after day after day, I don't think that's safe really. And I think that's just evidence that you're just short staffed, day after day after day.* (Anne)

8.3.2 THE CRITICAL CARE NURSE AND UNOBTAINABLE PERFECTION

Throughout the discussions on the impact of fatigue, it became evident that the participants' expectations of themselves and each other as critical care nurses were an important factor in how they perceived and assigned meaning to the threat of fatigue on safety and the resulting fear of its impact. A robust picture developed of a proficient experienced nurse committed to life-long learning, advocacy, and multidisciplinary collaboration. This ideal nurse was organized, logical, flexible and calm, knew her/his limits and sought help when needed. The critical care environment was described as "fast-paced" and sometimes "hostile", where experienced caregivers "demand respect". It was seen as an environment with a sense of urgency, "*It's an ICU, it's critically ill patients. There's an urgency to everything*" (Veno). The usual method of communication between staff was direct to minimize misinterpretation. However, with fatigue and its known impact on affective skills, this direct communication may deteriorate from direct to abrupt. As well, fatigue may increase the level of sensitivity to a relatively benign comment which may be perceived in some way as offensive, when tolerance and patience are lessened (Papp et al., 2004; Rogers, Hwang & Scott, 2004a; Rogers, 2008).

The participant group was an experienced group of nurses, with seven of the eight participants 41 years or older, and having more than 15 years nursing experience. The one younger nurse, Anne, provided an interesting perspective about what critical care nursing was like, as she described critical care nurses as striving for unobtainable perfection.

Higher strung type A, high expectations, expect perfection, type of thing, from yourself, from others. ICU has this unsaid expectation of perfection. It's in how people act. Outwards, of themselves, they expect perfection from themselves. And they expect perfection from others. Which, really in the end, I think is in the patient's best interests. People put a lot of pressure on themselves, as well as others. And probably over time, you can probably cope with that stress. But maybe over time, that might negatively influence you also. And make you feel like, well, nothing is ever good enough. Because nothing is ever perfect. That's a reality. Nothing with the human condition [is perfect]. (Anne)

When the description of critical care nursing was shared with the focus group, there was resounding support for its accuracy. Nurses described how they strived to maintain such a high standard, as judged by themselves and their coworkers. They described how despite so much hard work and diligence on any given shift, one comment or one small item that remained outstanding, could make them feel sorely inadequate as they failed to achieve 'perfection'.

You can work your butt off that whole shift and then you think, 'ahhhh, jeez, sorry', the first thing out of your mouth when you're giving report, 'sorry, I didn't get to that', 'sorry, I didn't do this', or 'sorry, I left…' Why do we feel obligated to say 'sorry'? I drive home and think, 'a jeez, I forgot to tell her this' or 'I didn't do this' or 'she's going to find out'…That's crazy! (Focus Group)

Additionally, it was discussed that this rigid high expectation was also transferred to nurses that brought patients into the ICU. It was described as often unprofessional and

unfair to have that expectation of other nurses, and demonstrated a lack of awareness of their practice setting and unit culture.

> *The expectations that we have of other staff on other units, is equally as high sometimes and it's not fair. When you are talking about these girls bringing a patient down, and it's one of eight or one of nine patients, and the first thing out of an ICU nurse's mouth is, 'they didn't even shave him'. You know what, come on, really? They're already panicked. They're already stressed. This patient's gone down the crapper on them. They're trying to look after a sick person in addition to all these other ones. They're already stressed. They have to give us report. And then you have these comments coming out.* (Focus Group)

This self and shared expectation that they should be able to complete the myriad of activities in a shift associated with the physical and psychosocial needs of their patient and family, at a level of perfection can take its toll. Nurses in this study spoke of, while in an environment of critical decisions and continual interruptions, they were responsible for their own work, along with supporting less experienced nursing staff and monitoring other healthcare providers; they have an ethical responsibility to advocate for their patients and monitor care (CNA, 2008). Their stories reflected how little control they had over their workload and the level of experience of other healthcare providers, how they struggled to manage many conflicting priorities, each with a high degree of urgency and importance, and a frightening threat of failure, all of these in and of themselves known to be stresses in the nursing work environment (Hall, 2004). Being situated within the occupational stresses of the nursing work environment is arguably related to the socio-cultural construction of the female role of caregiver and the constant demands both within and outside of the workplace setting (Street, 1995).

Complicating the nurses' perceived ability to have successfully fulfilled their role was the limited understanding by others about the nature of ICU nursing work. The nurses worked in an open environment, visible to others (e.g., patients, families, physicians, and management) yet a significant portion of what was important to the participants was invisible and undervalued (Street, 1995). Participants of this study spoke of the many invisible concerns of their work particularly those that fall within the cognitive domain such as monitoring, summating, evaluating, problem solving and decision making. This work is largely invisible to an observer, even an observer with medical training (Street, 1995). Invisible work has been rendered unacknowledged and undervalued setting the stage for the continuous drive towards the elusive goal of perfection ultimately leading to a sense of failure when this goal is not achieved. Akin to a rat in a maze, this inability among critical care nurses to meet expectations, of being unable to achieve a desired level of performance is a known work-related stress for nurses (Hall, 2004).

8.4 TENSIONS IN CULTURAL BELIEFS AND EXPECTATIONS – MANAGEMENT: "THE ELEPHANT IN THE ROOM"

In both the interviews and focus group, participants expressed the opinion that management at all levels would rather not discuss or acknowledge the use of workplace napping. In contrast, over the years, their direct-report managers had been aware and had "not opposed" and/or been "very reasonable" about the use of workplace napping to manage fatigue and support nurse and patient safety on night shifts. However, participants expressed a lack of clarity around the level of support or opposition by upper management. Many expressed the belief that management knew of its use, but did not want it highlighted or discussed. It was preferable to ignore the 'elephant in the room'.

It's almost like a secret. You know, 'don't let the public know'; 'don't let your managers know'. The managers probably know it's going on. It's an elephant in the room. Nobody will talk about it. If you don't talk about it in front of them, they won't have an issue with it, type of thing. (Anne)

In the interviews and focus group, participants described how they contributed to keeping the practice of workplace napping 'under the covers'. They discussed how, in talking with patient's families or a supervisor, they would openly engage in subterfuge by identifying that they were going for their breakfast on morning break, or going for lunch on a midday break, but they would never identify they were going for a nap on a night shift break. It was perceived that if management or the public thought nurses were sleeping on night shifts, it could result in negative implications for the future of the practice. The participants were quick to highlight that this concern should have little merit as they were napping on their break-time. Each paid shift is 11.25 hours, yet participants worked a minimum of 12.5 hours as they needed to accommodate for the overlap with the required unpaid report/patient hand-over time. Although participants acknowledged there should be no reason to be concerned, they were fearful 'someone' would tell them they couldn't nap on their break. Stokowski (2012) describes this as, "I'm not sleeping on the job, I'm napping on my break!" (p. 6).

I'd never say 'they're sleeping'. I would never use that word. We don't ever want anyone to tell us we can't do it. (Focus Group)

I am entitled to a break. This is human rights. (Jigger)

During the focus group, participants discussed what they described as an old notion of 'not being allowed to nap', and thought perhaps it was simply an unspoken rule

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that it was unacceptable to nap in the workplace. Stories were shared of past negative

reactions from nursing supervisors who would arrive in a work area to find a nurse with

her head on a desk asleep while others covered the patients. Stories included reports of

rude comments, kicking chairs, and physically startling or shoving people to wake them.

> *A girl I worked with, she was pregnant. When she was newly pregnant, to watch her, you just felt so bad for her. I remember supervisors coming around, 'What's she doing with her head down??'. We would let her go have a nap for a few minutes. She wasn't safe anyway. She can be physically here if something really goes on, but just let her have a few minutes. It will make a big difference in how she feels. Supervisors just absolutely horrendous, the insults, the physically going over and hitting people…* (Focus Group)

Participants suggested that some management may be 'old school' in their

attitudes towards workplace napping, and that this old notion of nurses not resting and

having to sacrifice, was deeply entrenched in some people's beliefs. Part of this attitude

towards the use of workplace napping may be attributed to the low level of autonomy

nurses have held within hospitals. Although the days of a nurse standing when a doctor

entered a room have passed, most nursing workplaces continue to be based on the

traditional medical model with its hierarchical nature replicated in managerial structures

(Doering, 1992; Roberts, 1983; Street, 1995). Theoretically, nursing has evolved from its

subordinate roots yet paternalism continues to have a stronghold within hospitals

(Duchscher & Myrick, 2008). Nurses are the backbone of healthcare providing 24/7

bedside care, placing them in a position of importance and influence for the patient;

however, the level of autonomy afforded them over their own practice remains restricted

(Street, 1995). The acute care hospital environment abounds with daily examples of a

socio-political culture which supports hierarchical gender-based oppression whether

explicit or implicit (Street, 1995). Healthcare cultural norms may be one of the significant barriers to the integration of an evidence-informed strategy to manage workplace fatigue.

The historical basis for not permitting healthcare professionals to nap has continued to plague some organizations, with some hospitals having policies that prevent the use of workplace napping (Dean, Scott & Rogers, 2006; Fallis, McMillan & Edwards, 2011; Humm, 2008; Scott et al., 2010b). This is arguably entwined with the cultural notion that fatigue is a sign of weakness, a failure to measure up to widely held beliefs and expectations of the ideal professional (Stoller et al., 2005). Owens (2007) describes this attitude as part of the medical culture of healthcare, which "often equates the number of hours on the job and hours without sleep with professionalism and dedication to patient care" (p. 93). Although there are areas where nurses do use night shift napping to reduce the negative effects of fatigue, it is often a hidden practice (Fallis, McMillan & Edwards, 2011; Mason, 2008). This creates a context within which nurses who use napping as an effective strategy to mitigate a threat to safety, have their actions labeled as 'illicit' or 'unprofessional'. One needs to consider what role nurses have at the decision-making table when these discussions have taken place or if they even have a role. Without the inclusion of the voice, perspective and beliefs of nurses around fatigue related issues, napping may remain a marginalized and stigmatized practice.

Findings from the interviews suggested it would be unreasonable and possibly negligent to ignore and/or fail to explore the benefits of workplace napping on nursing productivity, as well as patient and professional safety. It was noted that there should be even greater pressure to look at ways of managing fatigue as the workforce ages. A few participants discussed the possible implications of the liability of the organization and the

individual if there was an error at work or an accident on the way home, when the

organization failed to provide break time and rest time for shift workers.

> *Now if you go home, you're driving home, you cause an accident. You say, well*
> *I've been awake all night. That could come back legally on them also. If they*
> *didn't provide time for rest or time for a break, that's your institution. It's*
> *everybody's responsibility.* (Jigger)

With increasing research and knowledge about fatigue and its association with

errors and accidents, there is, justifiably, an increased cause for legal concern when

caregivers are awake for extended periods, particularly if the employing institution does

not have a fatigue management policy, or provide an opportunity for work breaks and rest

(Caruso & Hitchcock, 2010; Humm, 2008). In the legal system of some countries, for

example, the United States and Great Britain, there have been convictions of drivers for

vehicular homicide for drowsy driving. Furthermore, the employer's responsibility for

motor vehicle accidents involving fatigued employees is arguably similar to that of a

person serving alcohol to someone that is later involved in an alcohol-related accident

(Barger, et al., 2005; Smith-Coggins et al., 2006). Similar to alcohol-impairment, research

reflects that fatigue-impaired drivers are unable to assess their own ability to perform,

thereby increasing the responsibility of the employer to share the responsibility for fatigue

management.

Additionally, the participants wondered whether management wanted workplace

napping identified as a useful strategy to improve patient and nurse safety, as it would

increase pressure to support the practice in all work areas. The participants identified that

there are workplaces where the level of staffing does not consistently accommodate

nurses to take a night shift break. Integration of a workplace napping strategy could be

argued as posing serious system challenges if the changes meant ensuring adequate

staffing levels, mandating rests breaks and creating quiet rest space for staff.

> *If you have a room for a resident, why couldn't you have a room for a nurse*
> *somewhere? Really?* (Soup)

The observation that the cultural beliefs of management were in conflict with the

use of workplace napping and impeded an open and transparent approach to the

management of the safety threat of night shift fatigue identified by the participants of this

study, is in keeping with the 2010 study of Canadian nurses by the CNA and RNAO. The

CNA/RNAO study reported that 90.4% of the respondents indicated that their

organization had not developed policies and procedures to address fatigue, leaving nurses

to feel unsupported and their needs related to fatigue devalued by management.

Organizational culture impediments to responding to fatigue included descriptions of a

"'hero' culture that expected 'stoicism and martyrdom' in the face of the fatigue" (CNA

& RNAO, 2010, p.20). This is similar to the 'culture of sacrifice' described by the

participants of this fatigue study. The notion of a 'hero culture' reflects how nurses are

held responsible for everyone else, patients, families, and other healthcare professionals,

before themselves, and reinforces the expectation of working when fatigued. Heroes do

not require breaks; they persevere and rise above human weakness to face whatever

challenges are thrown their way. Management was complicit in this belief rather than

acknowledging the need for strategies to address a natural human response to working

nights. In the CNA/RNAO study, 59.5 % of nurses responded that a "culture of doing

more with less" impedes a cultural change to the management of fatigue (2010, p. 24).

The single-minded unblinking desire to expect selflessness and altruism from nurses,

whether depicted as a 'hero culture', a 'culture of sacrifice' or 'stoicism and martyrdom'

further impedes progressive steps to effectively manage workplace fatigue associated with night shifts.

In the one study of a fatigue countermeasures program in nurses, the authors noted that even when naps were permitted, nurses found it emotionally difficult to consistently commit to napping. For fatigue management programs to be successful, a paradigm shift would be necessary among nurses with the support of management (Scott et al., 2010a; Scott et al., 2010b). Part of the authors' qualitative study included an examination of the challenges associated with implementation, and provided some insight into the cultural forces at work in nursing fatigue management. Nurses identified their work culture, including feelings of guilt to report off to another nurse as impediments. The challenges to implementing a fatigue management program identified by management included resistance within the professional and organizational culture such as a lack of priority given to the need for breaks and self-care needs. This is similar to the findings of the CNA and RNAO study (2010). Scott et al. (2010) also identified that from an organizational perspective, the use of napping must be openly and explicitly supported by both management and human resource policies. Workplace napping must be recognized as an important way of ensuring patient and caregiver safety (Scott et al., 2010b). In a 2011 position statement examining fatigue and patient safety by the National Association of Neonatal Nurses (NANN), the first risk-reduction strategy identified states that a culture that recognizes nurse fatigue as an unacceptable risk must be created (NANN, 2011). The more one understands about fatigue research and the more insight one gains into personal experiences of night shift fatigue, the more unrealistic it is to expect nurses to sacrifice themselves while maintaining the high degree of performance. In a sentinel publication by the IOM, the authors stressed that "no amount of training,

motivation, or professionalism will allow a person to overcome the performance deficits associated with fatigue, sleep loss, and the sleepiness associated with circadian variations in alertness" (IOM, 2004, p. 387). Beyea describes healthcare professionals as falsely believing that they can maintain a high performance level while fatigued as a 'sleep myth' (Beyea, 2004). Key to counteracting this myth and protecting patient and healthcare provider safety is establishing a fatigue awareness culture, including a change in attitudes of all healthcare professions and organizations (Beyea, 2004). We need to recognize that "although you can teach yourself to sleep less, you cannot teach yourself to need less sleep" (Buus-Frank, 2005, p. 57).

8.5 TENSIONS IN CULTURAL BELIEFS AND EXPECTATIONS – THE PUBLIC

8.5.1 "HORRIFIED"

Discussions of how the participants' thought the public may perceive nurses using workplace napping led to some interesting and very consistent responses among participants. In general, the nurses felt that the public would be "horrified" if they knew nurses slept. It was recognized that within the unit, nurses napping on their breaks was not mentioned when explaining to a family that a nurse was going on break. The term "sneaking off" on break, was used, highlighting the negative connotations associated with the use of workplace napping. The participants in the Fallis, McMillan and Edwards (2011) study were also concerned that families and the public would not support the practice of nurses napping. Some of the participants of this thesis fatigue study did mention that they felt some patients' families had a greater awareness of the demands of the job, and the impact of fatigue and would be supportive of napping as they had spent many nights at the patient's bedside.

I think they would be horrified if they knew that we slept. So here we are sneaking off. We're like, we don't want them to see me, cause then they are going to know I was sleeping... heaven forbid. I don't think that they would think it was good idea at all, even though it is our break and we can do whatever we want. (Veno)

I think they (families at the bedsides) see more of what you do and I think they probably have more of an understanding ... of the demands on you and your job. 'I don't know how you do this job', is their reaction. 'This is the way I keep going, I go and lay down for an hour, then I can focus again,' and they'd have a complete understanding of that. (Boo)

Study participants also hypothesized that many of the public would subscribe to the belief that nursing is a giving, caring profession, and as such, nurses should not need to attend to their own physiological need for rest. This 'sacrifice' includes the expectation that nurses can work for twelve hours without somehow feeling the impact of fatigue and without allowing fatigue to impact their work. This again reflects a culture of nurses' sacrificing of themselves to try to maintain an arguably unobtainable standard.

You're a nurse, you're going to work a twelve hour shift, you're going to be tired. A sacrifice. It was like that, it's almost part of the job description, an expectation. You will be tired, so what, that's your problem, not ours, you're expected to come to work and be the same person twelve hours a day. (Jigger)

8.5.2 FAMILY DEPENDENT ON THE NURSE

In the interviews, the nurses strongly expressed that many families do not want the nurse to leave the bedside at all, at any time of the day or night, for any reason. This notion was further explored in the focus group discussion. They identified that the ICU can be a frightening environment, and families are very dependent on the nurse. As such,

many families find it difficult to accept that nurses do provide coverage for each other, and need to leave patient's bedsides to help others and to take a break.

> *There's even some patients' families, you say you're going to break and they just scowl at you, like 'what do you mean you're going to break? Who's going to be looking after my loved one?'.* (Jigger)

> *There are times, even during the day, that a patient's family thinks you should not take your eyes off your patient or walk away from your desk. Some of them don't even think we should have breaks half the time, I swear. So I can't imagine what they would think if we started saying, 'Oh we've been napping on night shift. To get through the night and to make sure your loved one is safe'. I don't know. Maybe if they knew that studies were proving it was more beneficial… I don't know.* (Soup)

The participants described some families as being highly dependent on the nurses' constant physical presence at the bedside. In some settings, this could be a deterrent to the nurses taking a much-needed break from the bedside as the nurse may be fearful of not meeting the family's expectations. In this ICU of study though, the family's dependence on the nurses did not deter the nurses from taking breaks if staffing and workload permitted. The interviews as well as my experience in this ICU reflected how the staff valued the benefits to patient care when nurses were able to take breaks. They identified a number of nursing strategies that they employed to re-assure the families, such as explaining how nurses cover for each other and how the various alarms work, answering patient-specific questions, introducing them to the nurse covering while they are away from the bedside, and generally reassuring the families.

A number of factors were identified as potentiating the desire of families to have the nurse present at the bedside constantly. For example, the participants identified that

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the sicker the patient, the more dependent the family. One experienced nurse, CL, shared an interesting observation of how she has observed that families in many ways were more anxious now that many ICUs have unrestricted visiting. The increased presence of the family at the bedside was described as increasing the family's sense of responsibility to be the voice, the hands, and the mind, of their sick family member. The presence of the nurse was felt to offer security to the family that nothing untoward would happen while the family member was acting as the patient's bedside proxy.

> *I think for a lot of them, when your family member was in ICU, you could come in 10 minutes every hour, and then you were ushered back out. Now they're sitting there at the bedside. I think they're taking on a lot of the anxiety for that person in the bed, and [the patient] can't speak, so they have to be everything. So that's how they have some control, I think. They see this person looking at them or maybe not even looking at them. They have to be the voice. They have to be the hands. They have to be the mind. 'So, you [the nurse] are the one that's not going to let anything happen when I'm sitting here'.* (Focus Group)

This family anxiety was discussed by the group as being fueled by families turning to the internet for information, described as a 'double-edged sword'. Although helpful in some ways to have a source of information, it is very difficult to identify credible, understandable, online resources and to be able assimilate it into the complex picture of a critically ill patient. Many families seemed to feel a need to be knowledgeable to contribute to their family member's care decisions. The sheer magnitude of how unreasonable it often is to be able to accurately assess the care and decisions by turning to on-line sources was discussed.

> *I remember this lady came in. Her husband had pancreatitis. She said to me, 'I cried all night', and I thought, he's not doing too badly. And I said to her, 'well why was that?' She said, 'because I looked it up'.* (Focus Group)

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There have been a number of studies done about visiting policies in adult critical care. Largely, the literature reflects that unrestricted visiting is associated with increased family and patient satisfaction and improved family, patient and healthcare team communication (Ciufo, Hader & Holly, 2011; Whitton & Pittiglio, 2011). It is worthwhile to note though, that most of the ICUs studied have varying degrees of restrictive visiting policies (Ciufo, Hader & Holly, 2011). The ICU in this current fatigue study has had a long history of open-visiting. Visitors are only restricted during times of bedside report or if there is an acute event occurring in the unit, both restrictions to protect the privacy of the patients in a very physically open unit.

One study reported a finding similar to that as described by CL. In a grounded theory study, Hupcey (1999) studied how families and nurses interact in the ICU. The study identified that the main role of the family was to protect or look out for the patient, as the patient was unable to do so for themselves. This is similar to CL's description of the family needing to be the voice, hands and mind of the patient, although the dependence on the nurse in supporting the family in this role as the patient's bedside proxy was not discussed (Hupcey, 1999). This hyper-vigilance by the family may reinforce the expectations that nurses must sacrifice themselves by not taking workplace breaks. Although the ICU in this study has a unit culture that recognizes the importance of taking breaks and the use of workplace napping as being important for patient and caregiver safety, the literature indicates that many work areas do not recognize the importance of taking workplace breaks. Additionally, although the nurses and their immediate unit coworkers support the importance of taking breaks, the nurses continue to be influenced by the expectations of others, including management, the organization and the public.

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8.5.3 "JUST DON'T GET SHIFT WORK"

Nurses in this study strongly suggested that the public "just don't get shift work", and as such, they had little understanding of the detrimental effects of fatigue and the need to actively try to minimize its negative impact. A few nurses pointed-out that even their own family members don't truly understand shift work, and that it was only other shift workers that understood the nature of night shift fatigue. This lack of understanding of the taxing demands of shift work might result in the public's underestimation of its effect, and incongruence in the common meaning of shift work, therefore misguidedly oppose such strategies as workplace napping. It was suggested that the only way to gain the public's support would be to educate them. However, the participants cautioned that the use of workplace napping may be best left unspoken given the potential risk for negative reception. Participants were apprehensive that 'someone' might make them stop using workplace napping. This apprehension that 'someone' would oppose the use of workplace napping clearly reflected the tensions among cultural beliefs and expectations.

> *Even my own mother. I remember telling her I take a nap on night shift. She'd go, 'You're napping? What are you napping for?' My own parents don't understand the fatigue that nurses feel.* (Soup)

The nurses involved in the Fallis, McMillan and Edwards study (2011) expressed similar concerns, wondering how the public might view nurses napping, and noted "they might not understand what it's like to work nights, and that's [napping] how we function" (p. e8). A recent online poll of nurses that focused on strategies to cope with night shifts also identified that the general public does not understand night shift work, describing how the 'non-owl' world was inconsiderate of the needs of those working at night. The poll reported nurses feeling that others thought they were lazy when sleeping during the

day (Stokowski, 2013). It might be argued that the lack of understanding of shift work might simply be the general population's inexperience and unfamiliarity with it. However, an additional factor might be a lower value placed on night work, on those who do night shift, and the invisibility of night shift nursing. Some may perceive that important medical decisions are made during the day with night shift staff simply following the plans set during the day, or 'holding the fort'. Night shift work is invisible, poorly understood and underappreciated (Nilsson, Campbell & Anderson, 2008). Again, this demonstrates how the nurses are situated as they try to mitigate a multifaceted threat to safety without acknowledgment or support. In fact, their most effective strategy, workplace napping, is viewed as an illicit activity that may be suggested as demonstrating lack of professionalism and dedication.

8.6 INCREASED POTENTIAL FOR MORAL DISTRESS

The impact of fatigue on the nurses' ability to provide safe care, along with the pressures and tensions in cultural beliefs and expectations within nursing, management, and the public, can result in an increased risk of moral distress. Moral distress occurs when the healthcare professional perceives that their personal and professional obligations are in conflict with what is happening; they know the ethically appropriate action, but they are constrained from taking it. Most of the research related to moral distress has been done in the critical care environment (Hamric, Borchers & Epstein, 2012). During the focus group discussion, it was identified that the negative effects of night shift fatigue on the participants' ability to communicate with patients, families and within the healthcare team, can result in an increased risk of moral distress. They described that fatigue and the resulting increased sensitivity or emotional response along

with less tolerance or patience, impaired communication so that problems were less likely to be resolved and could result in moral distress.

> *Being on night shift increases [moral distress] a hundred fold. You're more emotional. Your tolerance is less.* (Focus Group)

Poor communication with families and within healthcare teams has repeatedly been identified in the literature as a central cause of moral distress (Hamric, Borchers & Epstein, 2012). In this study, the participants' identification of the impact of fatigue on their ability to communicate with patients and families and the resulting increased susceptibility to moral distress is consistent with the moral distress literature.

Communication in the ICU environment presents many challenges. It is a high-pressure setting with often emotionally charged care. The ever present threat of an emergency contributes to a direct method of communication. Communication is often plagued by multiple interruptions and competing priorities in a chaotic environment (Driver, 2008). Seldom does the opportunity arise to quietly sit down and discuss a problematic situation without being interrupted and distracted. Additionally, critical care nurses are known to practice with a high degree of autonomy, and tend to have a strong sense of moral identity (Badger & O'Connor, 2006; Papathanassoglou et al., 2012). Advocating for patients is a key component of critical care nurses' role as moral agents (Wlody, 2007). However advocating can be "frustrating, time-consuming, and exhausting" (Wiegand & Funk, 2012, p. 485). As such, fatigue can potentially impact the nurses' ability to advocate for patients and families, and to fulfill their role in what they perceive as morally necessary manner. The participants described that their initiative to act as a patient advocate and pursue issues with supervisors or other healthcare team members may be decreased by fatigue. This impairment of their initiative to act as a

patient advocate impacts the nurses' ability to achieve the level of perfection they desire in patient care.

> *I think there are some nights you're just so tired, you're like, 'Ah, forget it'. As long as we think things are safe. You haven't gone over that line, we'll just say 'fine', 'whatever', and I do think the more tired we are, the less likely we are to…stand-up for whatever we're standing up for.* (Soup)

An additional factor in increasing the nurses' risk for moral distress is the apprehension that fatigue-related performance impairment could result in harm to a patient. This uncertainty or fear in the work environment can result in self-doubt, and impede the ability to achieve the desired level of perfection. Self-doubt has been identified as a contributing internal constraint within healthcare providers that can contribute to the experience of moral distress (Hamric, Borchers & Epstein, 2012). In this way, the tensions in the understanding of the impact of night shift fatigue, and the nurses' resulting fear and concern for safety, can precipitate moral distress.

8.7 SUMMARY

This chapter illuminated the experience of night shift fatigue as it provides insight into the use of workplace napping, and the tensions in cultural beliefs and expectations within nurses, management and the public. Although in many industries, the relationship between napping and safety has been acknowledged and the once taboo act of sleeping at work has become a part of the safety culture, the use of workplace napping remains largely an illicit act in nursing workplaces. The participants described how they are situated such that they aim to achieve a self and communal level of perfectionism in a context that does not acknowledge the threat of fatigue, their concern for safety, and their fear of its impact. The nurses, with limited individual power within organizational

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hierarchies, implemented a strategy that is well supported by research and experiential

knowledge, but yet is in conflict with cultural beliefs and expectations, and the common

meaning of nursing.

CHAPTER 9   THE IMPACT OF NIGHT SHIFT FATIGUE ON PERSONAL LIFE AND STRATEGIES TO REJUVENATE

9.1 INTRODUCTION

Discussions of the impact of shift work on employees' lives abound in both the published literature and informal nursing conversations. Research reflects that nursing shift work is associated with negative social and domestic consequences along with diminished job satisfaction (Cimete, Gencalp & Keskin, 2003; Lipovcan, Larsen & Zganec, 2004). The participants of this study shared stories reflecting pride in their profession as a critical care nurse. However, they also shared reflections of the profound impact of shift work fatigue on them personally, including their health and social lives. This chapter provides a reflection of the impact of night shift fatigue on the personal lives of the participants and their ability to minimize its impact. As well, a description of how the experience of shift work and night shift fatigue has impacted how the participants felt about their profession will be provided. The consideration of the impact of night shift fatigue on the nurses' personal lives provides a greater understanding of the nurses' concern about the impact of fatigue as they were engulfed by the challenges of trying to minimize its impact. This helps to provide greater understanding of how the nurses were situated within the experience of night shift fatigue.

9.2 ENGULFED BY FATIGUE: "THE NIGHT SHIFT HANGOVER"

Fatigue makes you stupid. Makes you fat. Makes you eat more. Less patient with home, which gets worse with the years. It does certainly affect your home life. (Guy)

Reflecting on the literature and the known effects of fatigue, the concern of the significant negative impact of fatigue on nurses' personal lives is not surprising. The

physiological effects of fatigue and resulting health conditions, combined with the neuropsychological effects such as mood alterations and increased irritability, can provide a significant challenge to the nurses' maintenance of physical and psychosocial well-being. An imbalance in the ability to manage the impact of fatigue on their personal lives was embodied as feeling engulfed within the challenges of achieving a balance in their lives. The activities that the participants described as important to their personal lives included interacting and socializing with families and friends, and maintaining their personal health. The participants shared experiences that reflected the impact of night shift fatigue spilling over into their personal lives. They explained how they planned their personal lives around how they knew they would feel for one, two and sometimes three days after working a night shift. Participants noted that as they aged, the length of time after the shift and the degree of impact increased. Additionally, the participants explained how they were concerned about the long-term implications of working night shifts both on their overall heath, and on their ability to manage the ongoing physical demands of their profession.

The 'night shift hangover', or the more immediate effects of night shift fatigue that the participants described as impacting their day-to-day lives included being draggy, malaised, cranky, sedentary, achy, indecisive and less social and ambitious, and susceptible to headaches. They explained how their families knew their work schedules and often anticipated that their ability to be involved in such things as family activities, socializing and meal preparation was diminished after nights. They spoke of how they often avoided social situations after night shift as they were not inclined to want to socialize or 'be good company'. They planned appointments and commitments to try to avoid activities during the period of 'the night shift hangover'.

It's like you're drugged... You get to the point, it's not fair to you, it's not fair to them [friends], because they're like 'what's wrong with you?' and I'm like 'I just don't know'. It's just, you're not yourself. (Jigger)

When I get up, all I want to do is have my coffee, have something to eat, and sit in front of a TV. I have no ambition to cook supper, go for a walk, to exercise, anything. And even the next day now. (Soup)

The Papp et al. (2004) model of the effects of sleep loss and fatigue identified one of the three main areas of impact as 'personal life', including personal well-being and relationships. The residents described how fatigue adversely impacted their physical health and health habits as well as their psychological health and mood. They described fatigue as making them feel detached from everyday life and relationships. The residents placed their own physical and psychological needs second to the demands of their profession. Similarly, nursing studies have identified the negative impact of shift work on nurses' family and social lives (Gallew & Mu, 2004; Novak & Auvil-Novak, 1996). Most family and social events are arranged to be in synch with the day-oriented society, and out of synch with shift workers. Shift work results in difficulties balancing work, family and social activities, and is associated with marital and parental role fulfillment difficulties (Costa, 2010).

One of Gallew and Mu's (2004) most significant findings in their phenomenological study of nurses' experiences with night shift was that the participants identified more concerns related to their personal lives than professional lives. The nurses expressed that night shift work resulted in less time for intimate and personal relationships. They identified how difficult participating in holiday events can be when they were either working or sleep deprived. The nurses struggled to fulfill their need for

sleep, feeling guilty about lost time with family. Gallew and Mu (2004) identified that these conflicts often involved fulfilling traditional female roles of mother, wife and homemaker.

The demographics of this study participant group reflected how several of them had caring responsibilities related to children and family members with health challenges. The expectation for the nurse to provide double-duty care at work and at home creates additional tensions and exhaustion (Ward-Griffin et al., 2005). Caring work remains largely women's work, and remains undervalued (Armstrong & Armstrong, 2006). As a group of female nurses, the personal lives of the participants are situated within the reality of a gendered world. The societal undervaluing of caring and domestic work results in a lack of recognition of their contribution as women, mothers, and caregivers in their personal lives. Complicating this is the nurses' personal responsibility for the management of the pervasive and multifaceted challenge of fatigue related to shift work.

In addition to the challenges of the fatigue of shift work, are the challenges of the nature of the care the nurses provided. Critical care nursing is a profession that involves supporting families and patients through frightening, life-threatening events, and is often emotionally demanding. As such, nurses often describe how these caring relationships with patients and families can impact them personally. The experience of stress as a natural consequence of providing empathetic care to others when suffering is termed compassion fatigue (Sabo, 2009). Although not explored in this study, the nature of care provided by the critical care nurses can add to their overall fatigue and the subsequent impact on their personal lives. Additionally, the participants strived to achieve a level of perfection in their work that was often unachievable. The caring demands of their professional lives and the challenges of achieving the level of desired perfection, plus the

fatigue of shift work, cascade into their personal lives. In the face of this cascade of professional life into personal life, the nurses tried to maintain a semblance of normalcy in their personal lives. The nurses were situated in such a way as they strived to achieve a manageable balance within this swirling mix of their personal and professional lives, to minimize a feeling of being engulfed by the responsibility of managing fatigue, to maintain satisfying professional and personal lives.

9.3 STRATEGIES TO REJUVENATE: STRIKING A BALANCE BETWEEN THE IMPACT OF FATIGUE AND FULFILLING PERSONAL NEEDS

The primary strategy used by the participants to minimize the impact of night shift fatigue on their personal lives was workplace napping. The nurses described how attending as best they could to fatigue while in the workplace, helped them to maintain a sense of well-being, including being ill less, being more motivated to exercise, and having more satisfying social and family interactions. The use of an effective workplace strategy reduced their concern for safety to a manageable level, allowing more workplace autonomy and subsequently greater professional satisfaction. The strategies used to rejuvenate or recharge in the nurses' personal time largely contributed to the maintenance of their health, and included allowing time to recover, pushing to exercise, and doing quiet or menial activities when fatigued.

> *You start organizing your life around how you know you're going to feel, because it's not that you don't enjoy [socializing], you may be physically there but you're mentally nowhere near there and everything is just extra work. It just becomes extra effort to go to anything.* (Jigger)

In keeping with the literature, the nurses described trying to get the sleep that they needed to recover between shifts, as "the only truly effective intervention for sleep loss

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and fatigue, not surprisingly, is adequate sleep" (Owens, 2007, p. 96). Many reported limiting appointments and social activities on those first couple of days after getting off night shift. This approach made it challenging to maintain their desired family and social roles. In one study, nurses responding to an online poll to share strategies to night shifts described becoming obsessed with sleep. Among many strategies, they described how family and social lives often have to adapt around them, and that working night shifts limits their social lives; the hours are limiting, as is the effect of fatigue (Stokowski, 2013). The nurses in the Gallew and Mu (2004) study described trying to find a balance between their overwhelming need for sleep and the need to fulfill their personal and social roles; sometimes they slept and sometimes they sacrificed sleep to try to fulfill their roles, which they described as "a 'Just Do It' attitude" (p. 26).

A review of the literature highlighted numerous health issues associated with shift work, therefore emphasizing the importance of actively trying to optimize one's health. The participants of this study expressed how they were aware that shift work and its associated misaligned eating and sleeping patterns, and impediments to regular exercise, all undermined their long-term health. As such, they explained how they recognized the importance of consciously considering other choices to optimize their health. Additional strategies the participants' described that they employed to try to overcome the night shift hangover included trying to force themselves to do such activities as exercise, walk their dog, garden, shop for healthy foods and prepare meals.

9.4 SATISFACTION WITH CAREER CHOICE

As the interviews progressed, and the participants expressed their feelings about the negative effects of fatigue and shift work, a discussion surfaced about their

satisfaction with their career choice, and how the fatigue of shift work has impacted how they feel about their chosen profession. A number of participants indicated that they had little awareness going into nursing of the long-term effects of fatigue. Although they loved many aspects of nursing, shift work led to some regrets.

I think now, if someone had told me, what it was really going to involve… 'you're going to have to work every holiday, well not every one, but a lot of holidays. This night thing, how it's going to affect your health and your life.' I don't know. I probably would have thought long and hard about it. But I didn't even think about that or take that into consideration at all. Having said that, I can't imagine doing anything else. I love my job, but…. (Veno)

No one's meant to work all night as far as I'm concerned. If I could go back, and realize how this is going to affect me? I don't know if I would become a nurse or not, that's how much I hate night shift. (Soup)

The participants expressed that they continue to see many positive aspects of the nursing profession, and identify it as a great career choice. When asked how they would advise someone considering nursing as a profession, most suggested that a thorough awareness of what was involved is necessary. This would include an understanding of the sacrifices made to do shift work, such as living with fatigue, and missing holidays and family events. They recommended that nursing be considered as a profession that has a profound impact on one's personal life, not just work life. Some participants acknowledged "feeling bad" about their honesty and possibly dissuading someone from becoming a nurse. But all participants felt that it is best for people to be informed when they make a decision about becoming a nurse.

Think about it, like how it's going to affect all of your life. This is only one part of your life. Think about picking a career that impacts all of your life, not just while you're at work. (Jigger)

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Really think about it. I don't try to discourage nurses. I think we need nurses. I just say, really think about nursing. It's a long career, and this is going to sound terrible, I know it is, 'with little respect, and it's hard'. It's hard on you. I just say 'Just really think about it. It's hard physically. It's hard mentally'. 'and you don't get paid...', it shouldn't be about money, I know that too. But it is about money now-a-days. (Soup)

Job satisfaction is a complex, multidimensional concept, with important implications for healthcare planners to consider as they struggle to address a global nursing shortage. Satisfaction is intricately linked with nursing retention and recruitment. Many job satisfaction studies have examined organizational factors and more recently, the contribution of personal factors to job satisfaction is being recognized. Personal factors include such things as emotional stress, shift work health problems, depression and family life considerations (Ruggiero, 2005). As knowledge of the impact of shift work becomes more widely known, it is apt to become a more important factor in nursing satisfaction, and therefore an important consideration for recruitment and retention efforts. The 2010 Canadian nurse fatigue and patient safety survey reflected that 25.6% were considering leaving the profession due to fatigue (CNA & RNAO, 2010, p. 19). They identified that the most important factors to help nurses respond to fatigue were "an organizational culture of safety, support from manager, physical space for recovery, and specific organizational policies" (CNA & RNAO, p. 22). Improving the workplace is fundamentally important to retention and recruitment (Priest, 2006). To improve hospital workplaces, we must realize that increasing levels of work and responsibility without increasing practice autonomy and influence in the workplace will continue to demoralize nurses. Being aware of the oppressive structures that continue to impact nurses and taking

consistent action will work to empower nurses, and help make nurses proud to encourage youth to enter the profession (Duchscher & Myrick, 2008).

9.5 SUMMARY

This chapter has given an overview of the fifth theme, furthering the understanding of the experience of night shift fatigue. The fifth theme related to the impact of fatigue on the nurses' personal lives, and the challenges it poses to interacting and socializing with families and friends, maintaining their health, and their sense of satisfaction with their career choice. The participants shared experiences that reflected the impact of night shift fatigue spilling over into their personal lives. The nurses described the primary way to reduce the impact of night shift fatigue on their personal lives was the use workplace napping, as attending to fatigue while in the workplace helped to reduce the impact on them personally. This consideration of the impact of night shift fatigue on the nurses' personal lives provides a greater understanding of how the nurses were situated within the experience of night shift fatigue.

CHAPTER 10   CONCLUSION: THE FINDINGS AND BEYOND

10.1 INTRODUCTION

The review of the literature and this subsequent thesis study exploring the experience of night shift fatigue in critical care nurses has illuminated a timely issue for nurses and healthcare organizations. This final chapter will highlight the findings of the study, and discuss its strengths and limitations. The future implications of the findings will be considered.

10.2 THE PHENOMENOLOGICAL FINDINGS

This study has provided an enriched understanding of the critical care nurse participants' experience of night shift fatigue. The overarching understanding of the meaning of night shift fatigue, the concern for safety as embodied by fear, was illuminated by exploring the phenomenological commonalities of the experience within the nurses' historical, social and cultural world. Five main themes were identified within this overarching understanding (Table 4).

Table 4: The Themes related to the Overarching Meaning of Night Shift Fatigue

Overarching Meaning of Night Shift Fatigue: A Concern for Safety Embodied by Fear
Fatigue & Safety: The Fear of the Impact on the Patient & on the Nurse Factors Interwoven in the Experience of Night Shift Fatigue Reducing Nightshift Fatigue: The Workplace Nap Workplace Napping: Tensions in Cultural Beliefs & Expectations The Impact on Night Shift Fatigue on Personal Life

The nurses' stories identified how the experience of night shift fatigue resulted in their concern for the safety of their patients and themselves. This threat to safety was embodied in the emotional response of fear. Secondarily, the nurses were concerned about the impact of fatigue on their personal lives and the challenges it posed to their maintenance of health and fulfillment of roles. This concern was embodied as a sense of being engulfed by the responsibility of managing fatigue both at work and personally; managing fatigue was solely a personal responsibility with little organization support or recognition.

The nurses were situated within the gendered context of being 'women' and 'nurses', working in a traditional, androcentric hospital setting. The nurses were situated such that they, as individuals, were trying to reduce the multifaceted threat of fatigue. This situated them such that their efforts, in the form of workplace napping, were in conflict with what is often perceived as the cultural expectations of nurses and women. The cultural, common meaning of 'nurses', 'women' and 'napping' resulted in multidimensional tensions, challenging the nurses' ability to manage fatigue. Temporally, this experience was located within the nurses' awareness of the additional challenges of ageing with fatigue, of clinical experience with fatigue, and of changes in unit workload.

10.3 STUDY STRENGTHS AND LIMITATIONS

Important to assessing the findings of a research study, is the identification of the study's strengths and limitations. As a qualitative study, the results reflect a rich, in-depth understanding of the experience of a small group, rather than the broader more superficial generalizable reflection of the experience of a larger group. This study was limited to one critical care area within one organization. Although it involved a limited number of

participants, the data collection was in keeping with a feminist interpretive

phenomenological study, and resulted in information-rich descriptions that allowed the

identification of themes depicting the critical care nurses' experience of workplace

fatigue and napping (Creswell, 2007; Morse, 2000; Starks & Trinidad, 2007).

Approximately 35 % of the unit's nurses volunteered to be involved in the study within

the timeframe established for potential participants to submit their name. From the 14

volunteers, eight were randomly selected. The sample consisted of a homogenous group

of experienced nurses: an all-female group with significant nursing experience, thereby

limiting the diversity of the sample. Further study involving broader, more diverse

groups, including males and less experienced nurses, in different clinical settings, may be

useful.

Additionally, my involvement as the researcher and as a peer of the study

participants should be addressed. I was a staff nurse peer of the participants, and in many

research traditions, this would be viewed as a source of bias. In some research traditions,

the researcher strives to achieve neutrality, as an objective outsider. However, research by

an insider is a strength of many qualitative traditions, as it recognizes that the insider is

situated such that they can better understand the experience of the participants and such

that the participants are more openly involved in the non-hierarchical inquiry. Research as

an insider is compatible with a feminist interpretive phenomenological study. Researchers

reflect on their pre-understanding and situate themselves in the research, so that they can

more clearly understand the participant. In this way, my prior awareness of the experience

was part of the inter-subjectivity and co-creation of understanding (Benner, 1994a;

Mackey, 2005; Walters, 1995). Additionally, study as an insider fosters a non-hierarchical

research process (Campbell & Bunting, 1991).

10.4 AND BEYOND - RELEVANCE OF STUDY FINDINGS

> *I don't know what the solution is. Night shift is part of nursing. I get that. But there has to be something that can be done that can help nurses. There really has to be.* (Soup)

This study examined a pervasive, broad-reaching nursing problem; night shift fatigue. As long as nurses are caring for patients, there will be a need for the night shift. The question becomes, how we best address fatigue so as to minimize the detrimental effects on patients and nurses. In keeping with a feminist approach to study, the question of what the study participants saw as the next steps for this process of inquiry and research study was posed during the focus group. The group identified the value in sharing their experience of night shift fatigue with other nurses. Suggestions to be pursued included presenting the findings at a conference and possibly publishing the findings.

Patient safety is a value central to the ethical practice of nursing, but "the values that we hold dear are not always apparent in our practices" (Street, 1995, p. 18). By defining fatigue as an individual issue, the evidence reflects that we minimize the value of patient safety in professional and organizational practices related to fatigue. Many organizations and industries have worked diligently to build a culture of safety, with experience and evidence highlighting that a culture of safety needs to extend throughout the organization; that is, a culture of safety has to be integrated into everyone's work. The safety culture belongs to the group, and is the 'way they do things' on a daily basis to promote safety (Feng, Bobay & Weiss, 2008). As is reflected in the narratives of the study participants, many nurses are consciously, creatively and communally supportive of fatigue management. Their work group recognized the threat that fatigue poses to patient

and caregiver safety; safety was their concern, and they had adopted 'a way of doing things' that promoted safety.

Previous research identified that fatigue management in healthcare organizations is impeded by cultural beliefs (Fallis, McMillan & Edwards, 2010; Scott, Hofmeister, Rogness & Rogers, 2010b). This thesis study reinforced how cultural beliefs can impede the integration of strategies to counter fatigue and efforts to promote safety for patients, nurses, and the public. Restrictive beliefs appear to revolve around the perception of fatigue as an individual weakness with workplace napping conceptualized as an illicit activity.

We need to acknowledge that the fear for safety is a signal for broad-reaching cultural change. We need to work towards situating nursing within an organizational and societal context that recognizes the nurses' concern for safety, and supports their efforts to reduce the threat of fatigue. As an additional impetus for change, the provision of healthcare is being challenged by a diminishing nursing workforce. Nurses are ageing, and the interrelationships among factors such as ageing, health and fatigue are clear. Additionally, the relationship of fatigue with moral distress and compassion fatigue, and the impact of fatigue on burnout and retention is concerning. A Canadian fatigue and patient safety survey reflected the grave impact of fatigue on nursing retention with 25.8% of the 7239 respondents considering resigning and 25.6% considering leaving the profession due to fatigue (CNA & RNAO, 2010). The propensity to constantly increase nurses' responsibility without increasing autonomy and influence within organizations will only further augment fatigue and restrict change. Action must be taken to change the "oppressive constraints to nursing practice, managers, and administrators [that] can contribute to the empowerment of hospital nurses" (Duchscher & Myrick, 2008, p. 202).

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Policy and decision makers need to recognize these oppressive constraints, and reflect an awareness of how these constraints restrict nurses, augmenting fatigue and impeding safety, nurse satisfaction and retention.

Although questions remain unanswered, it is time to recognize, acknowledge and integrate the body of evidence around fatigue management into healthcare practice through policy development. Six years ago, the Quality Worklife – Quality Healthcare Collaborative involving the partnering of ten national healthcare organizations and Accreditation Canada to develop strategies to foster a healthy workplace including fatigue management was established. Accreditation Canada has yet to identify leading practices for the management of work-related fatigue (A. Carrière, personal communication, June 4, 2013). In 2011, the RNAO released a comprehensive report of best practice guidelines to prevent and reduce nurse fatigue. In recent discussions with RNAO, they were aware of only two projects of limited scope in place based on the guidelines (A.Stewart-Pyne, personal communication, April 19, 2013). This reinforces a failure to implement steps to address fatigue within healthcare settings despite the evidence within the extant literature.

Table 4: Key Points from this Study to Support Action to Address Fatigue

· Share the responsibility for fatigue management & the culture of safety among individuals, professions & organizations
· Cease to ignore the wealth of evidence
· Recognize the threat of fatigue & our ethical responsibility

· Consciously support a cultural shift:
    · Ensure policies & decisions reflect the evidence about fatigue
    · Recognize & consciously work to change oppressive constraints, including the tendency to increase nurses' responsibility without increasing autonomy & influence within organization
    · Involve frontline staff & support actions within work groups that define their culture of safety

How does this study support us to address such a multifaceted complex problem as fatigue? (Table 5)

First, fatigue management must be recognized and acknowledged as a shared responsibility among individuals, healthcare professions and organizations. This first step involves recognizing fatigue as a normal physiological response, and not a weakness in the individual. This recognition must involve broad-reaching actions across organizations and professions to open the conversation to redefine fatigue. Professional programs and organizations must adopt policies that reflect a commitment to preparing and supporting nurses, recognizing that fatigue is a pervasive threat, a normal consequence of shift work, and not a weakness.

Through this redefining, we must cease to ignore the powerful body of evidence around the impact of fatigue and its management. Actions should be considered with the involvement of frontline staff, and should include supporting actions within work groups that define their culture of safety; staff should not fear that 'someone' will limit their ability to use evidence-based strategies that ultimately support patient care. Restrictive policies must be cautiously considered as they may negate the creative actions in place by individual work groups that foster local cultures of safety. The Quality Worklife – Quality Healthcare Collaborative advocates that fatigue management policy become 'embedded' within patient safety (Canadian Council on Health Services Accreditation, 2007). As fatigue is interwoven with so many factors in organizations, the consideration of fatigue must become embedded in our policies and become part of how we make all of our decisions; fatigue needs to be part of the 'checks and balances' considerations, and become one of the key risks considered when making decisions. This type of redefining will help foster the broad-reaching cultural change needed. Policy must be considerately

applied to shift a pervasive cultural change, and to support the frontline, 24 hour-a-day care providers.

Throughout all efforts to redefine fatigue and to bring its management out from under the covers, we must keep foremost in our minds the knowledge that out-dated cultural values and beliefs act as barriers. Our professions and organizations need to highlight how and in what way misplaced, age-old values and beliefs around gender and the profession serve to undermine efforts for change.

At the time of the completion of this thesis, the hospital where this study took place began an initiative to explore, identify and implement organizational strategies to address fatigue (M. Doucette, personal communication, April 24, 2013). I have been invited to be involved in the initial work. I remain hopeful that such initiative reflects a commitment by the organization to be supportive of the staff in redefining fatigue, and supportive of the necessary cultural shift.

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APPENDIX A

Letter of Invitation to Nurses to Participate

An Exploration of Critical Care Nurses' Experience of Night Shift Fatigue and Workplace
Napping: Bringing it out from Under the Covers

Dear _____ :

I am a student in the Master of Nursing Program at Dalhousie University. I am completing a
research study on the experiences of night shift fatigue and the use of workplace napping. The
literature would indicate that the level of evidence for the use of workplace napping is high, and
that findings have the potential to benefit nurses' personal health and patient safety. However, the
practice is infrequently implemented, and often not openly acknowledged. I would like to learn
about your experience with workplace napping, as well as your views, thoughts and ideas about
this approach to the management of workplace fatigue.

In order to be eligible to participate in the study you must work full-time or part-time as a bedside
nurse in MSICU for a minimum of 6 months. You must work a rotating schedule including 12
hour night shifts, and have experience using workplace napping on night shift.

Participating in the study will involve one face-to-face individual interview, followed by a focus
group with all study participants. There will be a written consent form with more information for
you to review. All information will be kept confidential. All identifying information will be
removed from quotes and stories. Your privacy will be protected, as no real names will be used in
the reporting of the study. If you choose to participate, you will receive $10 to cover your costs of
parking at the hospital, and your name will be entered into a draw for an e-reader.

If you are interested in participating in the study complete the response slip below. Please place
the response slip in the labelled sealed box on the window ledge in the Staff Room.

Thank you for considering participating in this research study. If you have questions or would like
more information about the study, please contact me.

Karen Webb-Anderson (kwebbanderson@eastlink.ca   865-0385)

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Response Slip - Detach _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Yes, I wish to participate in the study, " An Exploration of Critical Care Nurses' Experience of
Night Shift Fatigue and Workplace Napping: Bringing it out from Under the Covers"

Name: _____   Phone number: _____

APPENDIX B

Overview of Study for MSICU Communication Book
An Exploration of Critical Care Nurses' Experience of Night Shift Fatigue and
Workplace Napping: Bringing it out from Under the Covers

I am a student in the Master of Nursing Program at Dalhousie University. I am
completing a research study on the experiences of night shift fatigue and the use of
workplace napping. The literature would indicate that the level of evidence for the use of
workplace napping is high, and that findings have the potential to benefit nurses' personal
health and patient safety. However, the practice is infrequently implemented, and often
not openly acknowledged. I would like to learn about your experience with workplace
napping, as well as your views, thoughts and ideas about this approach to the
management of workplace fatigue.

I have put a letter in the mailboxes of all of our nursing staff. Please take a look at the
letter and contact me if you have any questions. Participating in the study will involve one
face-to-face individual interview, followed by a focus group with all study participants.
There will be a written consent form with more information for you to review. All
information will be kept confidential. All identifying information will be removed from
quotes and stories. Your privacy will be protected, as no real names will be used in the
reporting of the study. If you choose to participate, you will receive $10 to cover your
costs of parking, and your name will be entered into a draw for an e-reader.

Thank you for considering participating in this research study. If you have questions or
would like more information about the study, please contact me.

Karen Webb-Anderson   865-0385   kwebbanderson@eastlink.ca

Thesis Supervisors:
Dr. Brenda Sabo   494-3121   brenda.sabo@dal.ca
Dr. Megan Aston   494-6376   megan.aston@dal.ca

Bringing it out from Under the Covers

An Exploration of Critical Care Nurses' Experience of Night Shift Fatigue and Workplace Napping

Why: Literature has shown that the use of workplace napping has the potential to mitigate the negative effects of fatigue, and benefit nurses' personal health and patient safety. However, the practice is infrequently implemented, and often not openly acknowledged. As a result, I am interested in learning about your experiences, views, thoughts and ideas on this approach to managing workplace fatigue.

Who: I am seeking nurses who:
1. work full-time or part-time as a bedside nurse in MSICU for a minimum of 6 months
2. work a rotating schedule including 12 hour night shifts, and
3. have experience using workplace napping on night shift.

How: Participating in the study will involve one face-to-face individual interview, followed by a focus group with all study participants.

Thank you for considering participating in this research study. If you have questions or would like more information about the study, please contact me.

Karen Webb-Anderson   865-0385   kwebbanderson@eastlink.ca

Thesis Supervisors:
Dr. Brenda Sabo   494-3121   brenda.sabo@dal.ca
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APPENDIX D

STUDY TITLE: An Exploration of Critical Care Nurses' Experience of Night Shift Fatigue and Workplace Napping: Bringing it out from Under the Covers

STUDY INVESTIGATOR
Karen Webb-Anderson
Dalhousie University Master of Nursing Student
kwebbanderson@eastlink.ca
902-865-0385

1. Introduction

You have been invited to take part in a research study. Taking part in this study is voluntary. It is up to you to decide whether to be in the study or not. Before you decide, you need to understand what the study is for, what risks you might take and what benefits you might receive. This consent form explains the study.

Please read this carefully. Take as much time as you like. If you like, take it home to think about it for a while. Mark anything you don't understand, or want explained better. After you have read it, please ask questions about anything that is not clear.

The researchers will:
- Discuss the study with you
- Answer your questions
- Keep confidential any information which could identify you personally
- Be available during the study to deal with problems and answer questions

2. Why Is This Study Being Done?

I am a student in the Master of Nursing Program at Dalhousie University. I am completing a research study on the experiences of night shift fatigue and the use of workplace napping as a strategy to address fatigue.

The literature would indicate that the level of evidence for the use of workplace napping is high, and that findings have the potential to directly benefit the health of nurses and improve patient safety. However, the practice is infrequently implemented, and often not openly acknowledged. I would like to learn about your experience with workplace napping, as well as your views, thoughts and ideas about this approach to the management of workplace fatigue.

3. Why Am I Being Asked To Join This Study?

In order to be eligible to participate in the study you must have worked full-time or part-time as a bedside nurse in 3A Medical Surgical Intensive Care (MSICU) for a minimum of 6 months. You must work a rotating schedule including 12 hour night shifts, and have experience using napping on night shift to manage workplace fatigue.

4. How Long Will I Be In The Study?

This qualitative study will involve one face to face interview lasting approximately 60 to 90 minutes. After the individual interviews with the participants are complete, there will be a focus group with all study participants which is anticipated to last approximately 60 to 90 minutes long.

5. How Many People Will Take Part In This Study?

This is a local study being completed in 3A MSICU at Capital Health. This study will involve between five to eight nurses.

6. What Will Happen If I Take Part In This Study?

If you want to be in this study and sign this consent form, we will proceed with the initial face-to-face individual interview. This will include the completion of a brief demographic questionnaire, followed by the interview. This interview will take approximately 60 to 90 minutes. The interview will be held at a place of convenience for you, either in your home, in a quiet room at the hospital during non-work hours, or a convenient off-site location.

After the individual interviews with all participants are complete, there will be a focus group with all participants of approximately 60 to 90 minutes long. The focus group will be held in a private room at the hospital during non-work hours, or a convenient off-site location.

The interviews and focus group will be audio recorded. The interview transcripts will be analyzed to identify the themes and stories in the text, looking at experiences, values and beliefs about night shift fatigue and workplace napping. Please know that you are free to stop participating at any time during the study.

7. Are There Risks To The Study?

There are risks with this, or any study. The risk associated with this study is thought to be minimal. I want to make sure that if you decide to participate in the study, you have had a chance to think about the risks carefully. There may be risks that we don't yet know about. If you find the study interview upsetting, please know that you do not have to answer those questions you choose not to address.

Approval to proceed with this study has been received from the management of MSICU. While they are aware that the study is taking place, they will not know who is taking part.

As part of this study involves a focus group, other participants will know those involved. All study participants will be asked to respect the privacy of each participant, however confidentiality cannot be guaranteed.

8. What Happens at the End of the Study?

The results of this study will be used for the completion of thesis requirements. As well, the results will be shared with the participant group.

9. What Are My Responsibilities?

As this study involves interviews with individuals within one working group, I ask that you do not discuss the interview with your colleagues during the course of the study. I also ask that you respect confidentiality by not identifying study participants from the focus groups and opinions or thoughts expressed by individuals within the group.

10. Can I Be Taken Out Of The Study Without My Consent?

Yes. You may be taken out of the study if:
- There is new information that shows that being in this study is not in your best interests.
- The Capital Health Research Ethics Board, my thesis supervisors, or I decided to stop the study.

11. What About New Information?

It is possible but unlikely that new information may become available while you are in the study that might affect your health, welfare, or willingness to stay in the study. If this

happens, you will be informed and will be asked whether you wish to continue taking part in the study or not.

12. Will It Cost Me Anything?

Compensation
You will not be paid to be in the study. You will receive $10 to cover parking if the interviews are held at the hospital. Also, participants will receive a ballot at the individual interview and at the focus group, to enter into a draw for an e-reader.

Research Related Injury

If you become ill or injured as a direct result of participating in this study, necessary medical treatment will be available at no additional cost to you. Your signature on this form only indicates that you have understood to your satisfaction the information regarding your participation in the study and agree to participate as a subject. In no way does this waive your legal rights nor release the Principal Investigator, the research staff, or involved institutions from their legal and professional responsibilities.

13. What About My Right To Privacy?

Protecting your privacy is an important part of this study. When you sign this consent form you give us permission to:
- Collect information from you
- Share information with the people conducting the study (e.g., my thesis supervisors)
- Share information with the people responsible for protecting your safety (CDHA Research Ethics Board)

Access to records
The members of the research team will see study records that identify you by name.
Other people may need to look at the study records that identify you by name. This would include the CDHA Research Ethics Board and Research Quality Associate.

Use of records.
This research will collect and use only the information they need to complete the study. This information will only be used for the purposes of this study. This information will include your:
- age range
- gender
- years of nursing experience
- information from study interviews and questionnaires

I will keep your name and contact information secure. It will not be shared with others without your permission. Your name will not appear in any report published. Pseudonyms will be used to protect the identity of individuals. Information collected for this study will kept as long as required by law, for a period of 7 years or more. I will store the information collected in my home office, in a locked cabinet. Information identified by pseudonyms will be stored on a password protected computer.

If you decide to withdraw from the study, the information collected up to that time will continue to be used for the study; it will not be removed.

Your access to records

You may ask to see the information that has been collected about you. Following the individual interviews, the audio recording will be transcribed verbatim. You will be provided with a copy of this transcript.

14. What if I Want to Quit the study?

If you chose to participate and later change your mind, you can say no and stop the research at any time. If you wish to withdraw your consent please inform me. All data collected up to the date you withdraw your consent will remain in the study records, to be included in study related analyses.

15. Declaration Of Financial Interest

The Study Investigator has no financial interests in conducting this research study.

16. What About Questions Or Problems?

For further information about the study, you can contact me at 865-0385/ kwebbanderson@eastlink.ca.
The co-supervisors of this thesis are Dr. Brenda Sabo (494-3121 / brenda.sabo@dal.ca) and Dr. Megan Aston (494-6376 / megan.aston@dal.ca).

17. What Are My Rights?

After you have signed this consent form you will be given a copy. If you have any questions about your rights as a research participant, contact the Patient Representative at (902) 473-2133.

In the next part you will be asked if you agree (consent) to join this study. If the answer is "yes", you will need to sign the form.

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18. Consent Form Signature Page

I have reviewed all of the information in this consent form related to the study called:

An Exploration of Critical Care Nurses' Experience of Night Shift Fatigue and Workplace

Napping: Bringing it out from Under the Covers

I have been given the opportunity to discuss this study. All of my questions have been answered to my satisfaction.

This signature on this consent form means that I agree to take part in this study. I understand that I am free to withdraw at any time.

_____	_____	_____ / _____ / _____
Signature of Participant	Name (Printed)	Year Month Day*
_____	_____	_____ / _____ / _____
Witness to Participant's Signature	Name (Printed)	Year Month Day*
_____	_____	_____ / _____ / _____
Signature of Investigator	Name (Printed)	Year Month Day*
_____	_____	_____ / _____ / _____
Signature of Person Conducting Consent Discussion	Name (Printed)	Year Month Day*

*Note: Please fill in the dates personally

I Will Be Given A Signed Copy Of This Consent Form

Thank you for your time and patience!

APPENDIX E

Demographic Information Collection Tool   Pseudonym or Identifier _____

- Gender
        Female   □
        Male   □

- Age
        20-30 yrs   □
        31-40 yrs   □
        41-50 yrs   □
        51 yrs & over   □

- Total nursing experience
        less than 2 yrs   □
        2-5 yrs   □
        6-15 yrs   □
        more than 15 yrs □

- Nursing experience in an area that supports night shift napping
        less than 2 yrs   □
        2-5 yrs   □
        6-15 yrs   □
        more than 15 yrs □

- Current nursing position
        Permanent   □
        Term or Temporary □
        Full-time / Part-time _____
        Average hours worked in a 2 week period _____

- On average, how long does the commute home take after a night shift? _____

- You are the primary caregiver for (tick all that apply):
        Children (under age 18 yrs)   □
        Spouse with health challenges   □
        Parent with health challenges   □
        Other family or friend with health challenges □

- How would you describe your current general health:
        Excellent   □
        Good   □
        Fair   □
        Poor   □

APPENDIX F

Interview Guide: Critical Care Nursing Fatigue, Napping, Caregiver & Patient Safety

(Prior to interview - Confirm recording equipment working properly. Completion of Demographic Sheet.)
Date:
Time - Start: Finish:
Place:
Participant:
Introduce myself. Description of the study: (add scripted text)
Confirm Completion of Informed Consent:

Examples of Interview Questions

▪ What is it like to work night shift in MSICU?
▪ What has been your experience of fatigue on night shift?
    P ▪ Has your experience of fatigue changed over your nursing practice?
    P ▪ How does it affect your ability to provide patient care?
    P ▪ Have you ever been so tired from night shift that you were concerned for your
own   safety or the safety of others? Driving home?
▪ What strategies have you tried to help manage the fatigue of a night shift?
    P ▪ How do you keep awake on night shift?
    P ▪ How did you learn strategies to manage fatigue?
▪ What has your experience of workplace napping been like?
    P ▪ What do you perceive as the effect of napping or not napping on night shift?
    P ▪ What are the concerns about you or other nurses napping?
    P ▪ How does it affect patient care?
    P ▪ How does it affect the safety of nurses?
    P ▪ Have you experienced a feeling of grogginess immediately after your nap?
    How do you deal with this?
▪ How would you feel if you had to change work environments & the new area did not support night shift napping?
▪ How do you think the hospital or management perceive nurses napping on night shifts?
▪ How do you think the public would perceive nurses napping on night shifts?
    P ▪ families?
▪ Why do you think nursing and hospitals have not more widely adopted workplace napping?
▪ Is there anything else that you feel is important to note about fatigue, napping, and patient and nurse safety?

End of interview: Timeline for follow-up group interview. Thank-you.
(References: Creswell, 2007; Fallis, McMillan, Edwards, 2010; Patton, 2002)