ABSTRACT

MARTIN, SANNE HENNINGER. The Relationship Between Nurses’ Environmental and Psychological Empowerment on Psychological Strain in Critical Care Nursing Work Environments. (Under the direction of Dr. Timothy Hatcher.)

The present study examines the relationship between nurses’ environmental and psychological empowerment on psychological strain in critical care nursing work environments. Quality of medical care is to a great extent dependent upon the mental well being of health care professionals. Numerous studies have found that workplace stressors that result in psychological strain in critical care nursing environments are significant and associated with a negative impact on performance. Employee empowerment may help to determine workplace factors that help nurses cope with psychological strain. Randolph, Blanchard (1997) and Spreitzer (1995) proposed theories of empowerment that show promise for developing management strategies that enhance organizational success and that they are correlated with reduced psychological strain. The problem is that few studies use empowerment with nurses in a critical care environment. A t-test revealed a significant difference between nurses that had high levels of empowerment and those with low levels empowerment with regard to strain. Additionally, overall empowerment accounted for 28% of the variance in strain and clear structures and team accountability were significant predictors of strain.
THE RELATIONSHIP BETWEEN NURSES’ ENVIRONMENTAL AND PSYCHOLOGICAL 
EMPOWERMENT ON PSYCHOLOGICAL STRAIN IN CRITICAL CARE NURSING 
WORK ENVIRONMENTS

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DEDICATION

This is dedicated to all the people who still love me after all my time lost with them. That would mostly mean my kids.
BIOGRAPHY

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Chapter One

This chapter introduces the present study with a general introduction, the conceptual framework, the statement of problem, the purpose of the study and the research questions. Ultimately, it outlines the present study and its purpose.

In order to compete in an increasingly competitive global economy, healthcare has had to make dramatic changes with both positive and negative outcomes (Lawson & Luks, 2001). Change efforts in health care settings have been associated with increased nurse psychological strain symptoms and performance outcomes that have negative influences (Campbell, 1995; Hass, 2005; Spreitzer, 1997). Surprisingly, there have been only modest attempts in related research to identify workplace characteristics that can lead to psychological strain, which is defined by measurement of symptoms of anxiety, depression and somatic symptoms (Osipow, 2003). It is categorized as psychological, physical and behavioral responses (measured symptoms) considered harmful (Osipow, 2003). Strain is a workplace problem that affects employee health and performance (Yayli, Yaman & Yaman, 2003). Furthermore, research focuses on the consequences or antecedents of workplace strain but not on dimensions that have potential to prevent psychological strain (Laschinger & Spence, 2001).

Research has shown nursing to be an inherently hazardous occupation due to high workloads and significant demands resulting in increased psychological strain (Campbell, 2002; Savery & Luks, 2000). Research shows that occupational strain is increasing in healthcare and that it contributes significantly to physical and mental illness and ultimately performance and patient safety (Yayli, Yaman & Yaman, 2003).
High levels of psychological strain are well documented in critical care nursing over the last decade (Spreitzer, Kanter, & Dolan, 1992). Furthermore job-related psychological strain brought hazardous impact on a nurse’s ability to perform adequately implying risk to patient safety with high-risk patients who require the most intensive care (Yayli, Yaman & Yaman, 2003).

Studies focusing on worker health and safety in health care provide evidence of direct positive and/or adverse effects on performance related directly to the organizations’ work environment and suggest indirect effects on the quality of patient care (Clarke, 2002). In fact, experts are now considering mistakes as symptoms of organizational problems including a failure to create an environment of respect, shared responsibility and open communication (Clarke, 2002). Research also suggests that strain compromises accurate delivery of medications, treatments, protections of patients from self-harm, surveillance, notification of changes in status, and accurate documentation (Clarke, 2002). The potential hazardous consequence of the cumulative effects of environment and psychological strain on performance in nursing demonstrates the need to understand not only the antecedents but also preventive dimensions to psychological strain for healthcare workers (Clegg, 2001).

Empowerment has been found to be a dimension that influences people and work environments that has been associated with reduced strain and could prove to be a useful construct in the study of nursing psychological strain particularly as it may relate to nursing performance and ultimately, patient safety. Most research on psychological strain in healthcare had examined the aspects of the work environment that increase psychological strain (Lashinger & Spence, 2001). Because psychological strain is correlated with hazardous consequences in
critical care and empowerment is associated with reduced strain, one criterion of this research is that a better understanding of empowerment may make it a useful preventive strategy.

A study by Finegold & Lawler (2000) concluded that empowered employees that have control over how they perform considerably reduce the risk of psychological strain (Finegold & Lawler, 2000). Research also suggested that individuals who are empowered feel that they are in control of their jobs, have a sense of belonging and clearly understand their role, and thus have fewer psychological strain symptoms (Lundstrom, Pugliese, Bartley, & Cox, 2002; Spreitzer, 1997). Job strain was associated with poor patient and provider outcomes (Hass, 2005). Prolonged job strain results in professional burnout, emotional exhaustion, depersonalization and reduction in personal and work accomplishments. (Cheatham & Gunnar, 2003).

Karasek’s job strain model, a model similar to the one used in the present study, has been tested in hospital settings and has linked job strain to attitudinal and behavioral reactions, accidents, burnout, health complaints and illness (Karasek & Theorell, 1990; Lundstrom, Pugliese, Bartley, & Cox, 2002). When employees feel empowered, they have more positive attitudes in terms of work/job satisfaction (Spreitzer, Kizilos, & Nason, 1997), and organizational commitments (Kraimer, Siebert & Liden, 1999). A lack of environmental empowerment is consistently identified as the primary reason why nurses leave the profession (Lundstrom, Pugliese, Bartley, & Cox, 2002). Empowerment has also been associated with higher levels of performance, managerial effectiveness (Spreitzer, 1997), productivity (Lee, 2002), and work unit performance (Seibert, Silver, & Randolph, 2004). Randolph, Seibert & Silver (2004) defined performance as based on the criteria used by the company for individual evaluation and feedback and was aimed at being consistent with existing performance feedback.
instruments used in the organization and empowerment, as it was similarly defined in the present study was associated with higher levels of productivity for that profession.

The major theorists on empowerment are Randolph and Blanchard (1999) who developed measures of environmental empowerment and Gretchen Spreitzer (1995), who researched psychological empowerment used in nursing settings. The present study will expand the current research on environmental and psychological empowerment and determine how empowerment affects psychological strain. Of particular interest in the present study is how the dimensions of both empowerment constructs impacts critical care nurses’ psychological strain. As stated above psychological strain can lead to serious consequences for workplace environments with serious implications for work outcomes that can involve patient safety (Clegg, 2002). Critical care nurses, who already have tremendous responsibility, now will continue to have a greater numbers of patients. Additionally, the transfer of less acute patients to nursing homes and community-based care settings means that critical care nurses will be attending only to the most acute patients (Clarke, 2003).

It is imperative that nursing psychological strain be closely examined and that empowerment be researched to possibly reduce its negative impact. Nevertheless, because there are several different constructs that make up empowerment that influence strain, it is important to study those empowerment constructs in environments with high levels of potential strain such as critical care. The present study addresses how both psychological and environmental empowerments are correlated with psychological strain. Because of the lack of a clearly defined construct of environmental empowerment, another goal of this study is to further define and add validity to this construct.
**Conceptual Framework**

The three theories that are synthesized into a conceptual framework for the present study are Blanchard and Randolph’s (1997) theory of environmental empowerment, Gretchen Spreitzer’s (1995) theory of psychological empowerment, and Osipow’s (2001) theory of psychological strain. Two distinct empowerment constructs are used to determine relationships between one another and to determine the predictive power of empowerment on psychological strain. See Figure 1: An Illustration of the relationship between nurses’ empowerment and psychological strain.

![Figure 1 The Relationship Between Nurses’ Empowerment and Psychological Strain](image)

It appears that extreme lack of empowerment or the lack of decision-making latitude can have potentially devastating effects on employee health, self-esteem and the ability to cope with high stress situations. Major changes in healthcare, particularly staff shortages, have made it
increasingly important for nurses to be able to take on more responsibility and increased autonomy (Hass, 2005). It is therefore the ideal time to allow nurses a greater say and increased participative decision making to enhance empowerment (Dempsey & Larson, 2004). Randolph & Blanchard’s (1997) dimensions support the importance of providing policies and practices that allow employees to feel comfortable making decisions with a higher likelihood of accuracy.

A focus on teams and clear structures has been found in the nursing management literature. Blanchard’s construct dimensions (clear structures, information sharing and team accountability) are similar to the researched dimensions of Kanter (1979) in nursing. Randolph and Blanchard’s theory appears to be more useful in healthcare where teams and functional groups have become an important means of work and most nursing research excludes this important component (Dempsey & Larson, 2004). Every day, hospitals and healthcare organizations struggle to rely on teams but face infighting, internal friction and competition, all of which interfere with lateral and collaborative communication (Cohen, 1988).

Spreitzer (1995) suggested that no one-dimensional conceptualization of empowerment could capture the full essence of the concept. Rather than being antecedents or outcomes of each other, the four dimensions represent different facets of the psychological empowerment construct. This construct is well suited for use with environmental empowerment and psychological strain in critical care nursing because it is used in that context in several nursing studies and was associated with reduced nursing strain (Lee, 2002; Laschinger, Finegan, Shamian, & Wilk, 2000). The four dimensions are also represented in the nursing literature as separate dimensions related to reduced psychological strain and positive work outcomes (Cohen, 2003).
Since Spreitzer (1995) defines psychological empowerment as the psychological state that employees must experience for managerial empowerment interventions to be successful, she is defining it as a logical outcome of managerial efforts such as those presented in Randolph and Blanchard’s (1995) theory that included team accountability, clear structures and information sharing. Spreitzer (1995) found managers’ access to strategic information in the organization was significantly related to their perceived psychological empowerment. This is consistent with the notion that psychological empowerment is a consequence of structural empowerment conditions (Laschinger & Spence, 2001).

Osipow (1991) developed a theory and survey instrument based on the earlier work of Langner (1962). Like Lazarus, his view suggests that it is no longer appropriate to search for single cause and effect antecedents to psychological strain. Osipow (2003) contends that psychological strain is a transactional term such that it does not reside only in the individual (strain) or only in the environment (stressor) and it measures psychological symptoms.

Osipow (2003) developed a psychological strain survey for use in occupational settings. The survey assesses such symptoms as anxiety, depression, and lethargy, which are symptoms linked to poor coping skills. The Occupational Psychological Stress Inventory (OSI-R) developed by Osipow and his colleagues (Osipow, 2003) is the general measure for psychological strain used in the present study. This construct is well suited for the present study because it assesses strain outcomes commonly found in critical care nursing.

A definition of critical care is included to provide an understanding of how the three constructs of the present study (psychological, environmental empowerment and psychological strain) are supported by the chosen critical care environment. A more detailed definition of critical care and its context is offered later within this chapter and again in Chapter 2. The
hospital context in which the present study is proposed is in the critical care intensive units that serve the most critically ill patients. Critical care is the most intense of three levels of nursing care: acute, immediate and critical.

In critical care, the ratio of nurse to patient is much lower, often one nurse to one or two patients, and the nursing responsibility level is higher than for any other kind of patient with the frequency of intervention every 10-15 minutes versus 30-40 for general nursing duties. The critical care departments consist of ICN (intensive care neonatal), PICU (pediatric intensive care unit), CTSU (cardiac thoracic surgical unit - open-heart surgery), NICU (neurological intensive care unity), SICU (surgical intensive care unit), MICU (medical intensive care unit) and CCU (cardiac care unit).

Requirements for critical care nurses are stringent. To become a critical care nurse requires practice as a registered nurse for 1,750 hours in direct bedside care of critically ill patients during the previous two years, with 875 of those hours accrued in the most recent year preceding application. Clinical practice hours for a Critical Care Registered Nurse (CCRN) examination or renewal eligibility must take place in a US based facility or in a facility determined to be comparable by verifiable evidence to the United States standard of acute and critical care nursing practice. Nurses serving as managers, educators or preceptors may apply their hours spent supervising nursing students or nurses at the bedside. The other certification examination is the Critical Care Nurse Specialist (CCNS) examination. This examination has specific eligibility requirements including 500 hours in direct clinical practice within the master’s program. Nurses in these roles must be actively involved in caring for patients at the bedside (Karasek & Theorell, 1990).
Within an inherently intense environment, many studies have discovered workplace factors associated with strain, but few variables have been discovered that could be related to reduced strain. The present study seeks to discover the factors or sub-factors of the two dimensions of empowerment that are related to strain in critical care nursing. Indirectly, this could serve to identify preventive strategies for psychological strain. Given that psychological strain has been associated with hazardous outcomes in critical care nursing settings, any discovery regarding antecedents to reduced strain would be helpful. The direction of the relationship of the variables makes sense for practical reasons since most strain studies focus on what increases strain or the negative affect of strain on some outcome such as job performance (Boss, Koberg, Goodman & Senjem, 1999).

Many empirical research studies link both psychological and environmental empowerment with reduced job strain in healthcare (Clegg, 2001; Laschinger & Havens, 1997; Laschinger, Finegan, Shamian, & Wilk, 2000). Environmental empowerment has been associated with psychological empowerment and reduced psychological strain (Beehr, 1995). Spreitzer (1995) found relationships between environmental empowerment and psychological empowerment and found that low role ambiguity; strong sociopolitical support, access to information, and a participative climate were associated with perceptions of empowerment. These findings support a compatibility of Spreitzer’s (1995) construct with Blanchard’s (1997) environmental empowerment construct. For instance, sharing of information (an environmental empowerment dimension) was found significantly related to the psychological empowerment facets of meaning, self-determination, and impact (psychological empowerment dimensions). Additionally, teamwork (an environmental empowerment dimension) was related to meaning, and concern for performance was related to meaning and self-determination. Spreitzer (1995)
used Randolph and Blanchard’s (1996) dimensions of environmental empowerment with her own dimensions of psychological empowerment.

The empowerment literature shows a correlation between empowerment dimensions suggested by Randolph and Blanchard (1997) and reduced psychological strain in nursing (Lundstrom, Pugliese, Bartley, & Cox, 2002). Laschinger and Havens, 1996; Huston & Marquis, 2003) found that empowerment in nursing strongly related to perceived control over nursing practice, which was subsequently related to reduced psychological strain.

These three constructs, environmental empowerment, psychological empowerment and psychological strain are used in critical care nursing studies and provide an understanding of how empowerment may be associated with reduced psychological strain. What makes the present study unique and significant is how the constructs environmental empowerment (Randolph, Carlos & Blanchard, 2001), psychological empowerment (Spreitzer, 1995), and psychological strain (Osipow, 2003) were chosen based on the match of each definition to the context of critical care nursing. Additionally, the present study differs from other strain research in that it addresses factors that reduce strain, not the factors that cause strain.
Statement of Problem

High levels of psychological strain in critical care nursing are well documented (Spreitzer, Kizilos & Nason, 1997). Furthermore, studies have found psychological strain resulting from stressors in critical care nursing environments significant and associated with hazardous impact on performance (Campbell, 2002; Clegg, 2001; Lee, 2002).

This is particularly significant for critical care nurses given that they work with patients who are at highest risk and require the most intensive care (Yayli, Yamen & Yamen, 2003). Together with the organizational constraints inherent in the hospital system, critical care nurses may also be faced with an increasing amount of work-related psychological strain and negative mental and physical health effects. Psychological strain affects nurses’ physical health, emotional stability, sense of adequacy and performance related to patient safety (Clegg, 2001).

In related literature, empowerment within people and their work environments is proposed as a set of dimensions that may reduce the response to workplace stressors so often associated with psychological strain (Clegg, 2001). Both levels of empowerment (environmental and psychological) have been associated with positive work outcomes such as reduced psychological strain in a variety of workplace settings including healthcare (Kraimer, Seibert & Liden, 1999; Spreitzer, 1995; Spreitzer, Kizilos, & Nason, 2000). Several studies have associated lower Intensive Care Units’ (ICU) mortality rates with the degree of interaction and coordination of the ICU staff (Laschinger, Finegan, Shamian & Wilk, 2000).

Most research on psychological strain in healthcare has examined aspects of the work environment that increase psychological strain (Laschinger & Spence, 2001). The potential hazardous consequences of psychological strain on performance in nursing demonstrate the need
to understand not only the antecedents but also preventive dimensions to psychological strain for healthcare workers (Clegg, 2001). Depression, anxiety, and psychological distress are elevated in individuals working in high strain jobs (Yayli, Yaman, & Yaman, 2003). Studies focused on worker health and safety influenced by the physical work environment provide evidence of direct positive and/or adverse effects on performance, turnover, and absenteeism and suggested indirect effects on the quality of patient care (Lundstrom, & Pugliese & Bartley, Cox 2002).

The problem is that while psychological empowerment is well defined in the related literature and environmental empowerment is gaining theoretical support, the two constructs have not been used to clearly support conclusions about how empowerment could affect psychological strain specifically for critical care nurses. So, while empowerment and its impact on psychological strain has shown promise in research, very few studies have found relationships between a consistently defined environmental empowerment construct, psychological empowerment and psychological strain in critical care. To date, research has not consistently focused on empowerment as a single construct, nor has it focused on individual dimensions of environmental empowerment. Moreover, the leading environmental empowerment constructs used in nursing do not include the measurement of teamwork or of clarity of structures. These dimensions of empowerment are increasingly important on the job and in the nursing literature because of the critical need to decrease errors and manage the effects of worsening staff shortages. The results of such studies could provide useful information for nursing and hospital management.

Critical care medicine, because of its unique complexity and relatively high rates of morbidity and mortality, continues to be the focus of outcome studies and evaluation in attempts to improve the quality of care (Hass, 2005). Research is needed to assist in finding any means to
reduce mortality and complication rates that are innately part of providing care to the critically ill in the modern intensive care unit (Hass, 2005).

**Significance of the Problem**

The present study is significant because psychological strain is predicted to worsen and is associated with poor performance, patient safety and rates of mortality in healthcare (Hass, 2005). Critical care nursing in particular is inherently stressful and research suggested that the high levels of strain in healthcare are having a detrimental effect on the health and performance of critical care nurses (Savery & Luks, 2001). This section provides support for the significance of the present study by outlining the risk of strain to nurse employee health, the ongoing and worsening sources of strain in healthcare, the consequences of strain and how environmental empowerment has been associated with strain.

Research suggests a consensus that job strain is detrimental to healthcare workers’ performance (Beehr, 1995). Healthcare studies focusing on worker health and safety concerns affected by the organization and the physical work environment, provide evidence of direct and positive and/or adverse effects on psychological strain and performance suggesting indirect effects on the quality of patient care (Lundstrom, Pugliese, Bartley, & Cox, 2002; Savery & Luks, 2000). For instance, cost-driven changes in management methods systematically devalue nurses’ knowledge, displace their professional judgment and decrease nurses’ productivity, causing increased work psychological strain and high burnout and turnover levels among critical care nurses (Lee, 2003; Health Resources and Services Administration, 2001).

The literature clearly suggests that psychological strain is a growing problem and can cause serious consequences to a critical care nurse’s ability to perform. The overall performance of nurses rests with how well they care for a patient. Thus, poor performance is directly related
to patient safety. This is particularly true in critical care where nursing responsibility and patient risk is at its highest.

The link between nurses’ work conditions (elements of empowerment) and patient outcomes was demonstrated by Almost (2000) who found that hospitals with strong supportive nursing work environments had significantly lower mortality rates than those that did not. It was suggested that a hospital’s failure to create an environment of respect, shared responsibility, and open communication among staff from various disciplines, which are similar to dimensions of empowerment, compromises, the quality of nursing care. Key constraints include facilities’ budgets and the availability of qualified nurses (Clarke, 2003).

Clarke (2003) suggests that the changes in nursing environments, particularly low staffing, compromise the comprehensiveness and quality of nursing care such as accurate delivery of medications and other treatments, protection of patients from self-harm, surveillance, and notification of changes in status and accurate documentation. Studies have also illustrated that lower Intensive Care Unit (ICU) mortality rates were associated with the degree of interaction and coordination of the ICU staff that are similar to the environment dimensions of information sharing and clear structures. A related study found that a patient-centered culture, and strong physician and nurse leadership were also associated with lower mortality (Almost, 2000). Lower mortality has been associated with better process performance.

Additionally, psychological strain has been found to create a hazardous impact on not only nurses’ health but also their ability to cope with work demands (Yayli, Yaman & Yaman, 2003). In a study of job psychological strain, nurses proportionally intensified injurious consequences in operating rooms (Harding, Munro, & Rowell, 1998). The impact of psychological strain is also perceived to affect the quality of care within overall unit patient care,
the health of all the staff, those whom fall victim to psychological strain-related illness and their colleagues who face the psychological strain of work force shortages.

Patient safety experts focus most on situations in which staff members make critical decisions and are considering mistakes as symptoms of organizational problems including a failure to create an environment of respect, shared responsibility and open communication, which are dimensions closely related to environmental empowerment (Clarke, 2003). Clearly, if a nurse makes poor decisions those decisions can cause accidents and patient harm. Congrove (1992) also found that perceived work autonomy like that of impact, a psychological empowerment dimension and had a direct effect on work satisfaction, which in turn, directly affected how patients experienced their care from the nursing staff.

It is estimated that many billions of dollars are lost yearly in healthcare in the United States alone due to occupational psychological strain (Brink, Bengtsson & Olofsson, 2003). These costs are realized in the form of decreased productivity, increased absenteeism and increased turnover, and to increased costs of medical insurance to employers and employees (Brink, Bengtsson & Olofsson, 2003). Turnover among nursing staff is an important issue for hospitals because of the high cost of recruiting new employees, the negative effect on patient care, and its contribution to the decreased morale of the nurses who remain. Studies have found that the more job strain, the higher the anticipated turnover and rate of burnout defined as emotional exhaustion and a loss of interest or concern with whom one is working (Lundstrom, & Pugliese & Bartley, Cox 2002; Brink, Bengtsson & Olofsson, 2003).

The doctrine of corporate liability is to hold hospitals accountable for failures to ensure a safe and conducive environment for patient care. Because the healthcare work environment will only continue to present enormous pressures, and psychological strain is typically dealt with after
it has occurred, nursing strategies must be developed to reduce risks. In order to address the problems of psychological strain there needs to be a better understanding of the concept of psychological strain, its causes and its consequences; but most important, dimensions that are correlated with reduced strain. Strain research has shown that organization change is a progressively worsening problem in nursing because it leads to psychological strain and increases the risk of injury/illness (Savery & Luks, 2000). Empowerment strategies have been proposed as having possible solutions; however, there is no consistent definition of the two levels of empowerment and, therefore, not enough research currently exists that might determine which components of empowerment are most likely to reduce psychological strain. The distinction between perceived stress and experienced strain is critical to the understanding of the present study. Based on Lazarus’ (1966) theory of stress, stressors are events in the workplace perceived as threatening and psychological strain is the response to those stressors.

Nurses’ high job stress and psychological strain is well documented in critical care nursing where the environments are the results of a nursing shortage, that is already intense and are undergoing radical restructurings (Laschinger, 1996). The prediction is that nursing strain will continue to worsen (Clarke, 2003). Key factors in this prediction include constraints of facilities’ budgets, the availability of qualified nurses, changes in nursing environments, particularly low staffing, all of which compromise the comprehensiveness and quality of nursing care (Clarke, 2003). Critical care nurses, who already have tremendous responsibility, now will have a greater number of patients. Additionally, the transfer of less acute patients to nursing homes and community-based care settings means that critical care nurses will attend to only the very most acute patients.
This change in service setting as well as other external factors such as pressures from HMOs (Health Maintenance Organizations) has also resulted in decreased lengths of patient stay in hospitals and a decline in the numbers of beds staffed. Therefore, the acuity of patients increases as those patients remaining in hospitals were those too medically complex to be cared for in another setting (Hass, 2005). Other factors shown to increase nurses’ psychological strain include increased workload and patient care, interpersonal relationships and bureaucratic political constraints. Lack of professional latitude was also a major factor in job strain identified by Lee (2003).

Inadequate staffing, heavy workloads, and the use of overtime to address staffing shortages are key areas of job dissatisfaction among nurses identified in related literature. Seventy-nine percent of nurses say they had seen a rise in acuity of patients (Hass, 2005). When adjusted to reflect the rise in acuity levels, the number of hospital employees, including nursing staff for each patient discharged declined by more than 13 percent between 1990 and 1999 (Hass, 2005). These factors increase the work intensity for individual nurses (Laschinger & Spence, 2001). Fifty-six percent indicated that they wanted a less stressful job.

In response to competition, economics and a myriad of other factors, the U.S. healthcare system has had to change significantly over the past two decades, affecting the environment in which nurses provide patient care. Advances in technology and greater emphasis on cost effectiveness have led to changes in the structure, organization and delivery of health care services. Nursing managers feel these pressures typically through their facilities’ budgets and then by the availability of qualified nurses to work designated positions and shifts. Since research-based optimal staffing levels are unlikely to appear any time in the near future, a combination of financial and human resource constraints, conventional facility practices, and on-
the-spot judgments will continue to drive staffing decisions (Clarke, 2003). Nursing managers face serious strain as they attempt to reconcile their obligations as officers of their organizations with their ethical responsibility to patients (Clarke, 2003).

The Bureau of Health Professions in 2000 estimated the national supply of full time equivalent (FTE) registered nurses was estimated at 1.89 million while the demand was estimated at 2 million, a shortage of 110,000 or 6 percent (Health Resources and Services Administration, 2001). Trends in the supply of RNs and their anticipated demand suggests that the shortage is expected to grow relatively slowly until 2010 at which time it will have reached 12 percent. At that point, demand will begin to exceed supply at an accelerated rate. By 2015, the shortage, a relatively modest 6 percent in the year 2000, will have almost quadrupled to 20 percent. If not addressed, and if current trends continue, the shortage will increase to 29 percent by 2020. Demand will grow steadily at a rate of 1.7 percent annually, a relatively modest growth rate when compared to the 2.3 percent annual growth in demand projected by the Department of Labor’s Bureau of Labor Statistics (Health Resources and Services Administration, 2001). Factors driving the growth in demand include an 18 percent increasing U.S. population, a larger proportion of elderly and medical advances that heighten the need for nurses. In contrast, the projected growth in supply is expected to reach a peak of only 10 percent by 2011 and then begin to decline as the number of nurses leaving the profession exceeds the number that enters.

The most difficult barrier to implementing new management theories in hospitals is their traditionally bureaucratic, complex and highly departmentalized structure that tends to create a particular culture and support a specific leadership style (Hass, 2005). On the one hand, the professional nurse is expected to develop an ever-increasing repertoire of technical expertise in clinical care and yet there is a distinct lack of power granted for them to make managerial
decisions (Boss, Koberg, Goodman & Senjem, 1999) Also problematic are the unique relationships hospitals have with physicians and conflicts between hospital management (Dempsey, & Larson, 2004; Cohen, 2003). While hospitals and healthcare facilities are surrounded by teams and functional groups they struggle with infighting, internal friction and competition, all of which interfere with lateral and collaborative communication and ultimately, patient care (Dempsey, & Larson, 2004; Cohen, 2003).

Staffing levels provide the most basic context and the most direct type of constraints on nursing practice. When staff levels are low, a nurse’s workload intensifies. This leads to an increase in job strain and poor patient outcomes that may result in unsafe patient outcomes (Dempsey & Larson, 2004; Cohen, 2003). Moreover, downsizing means that nursing roles will have to change in order to meet increased demands with less available staff with structures that allow for autonomous decision-making (Kanter, 1979; Laschinger, Finegan, Shamian & Wilk, 2000).

Optimal management of resources is clearly a very complex and difficult task for healthcare systems. Hospital managers often attempt to meet new demands with structural changes such as rotating shift patterns, causing work overload and structural upheavals. Ideally, this is an opportune time to allow nurses more autonomy in decision making to enhance responsibility and feelings of success (Dempsey, & Larson, 2004; Cohen, 2003).

According to Clarke (2003), the focus in healthcare is to find the cause of errors and to view them as symptoms of a flawed system rather than simply as the fault of a nurse. The causes of error include insufficient staffing levels, inadequate orientation and training, failure to monitor competency on an ongoing basis and failure to create an environment of respect, shared responsibility, and open communication among staff from various disciplines (Clarke, 2003). In
a study examining 268 staff nurses’ perceptions of their job environment, Lee, (2000) found that overall, nurses had low scores on all dimensions of Kanter’s (1979) empowerment dimensions. Chandler interpreted these results to be a reflection of the non-empowering work environments in these settings. Since shared responsibility and communication among staff are a part of the empowerment definitions, this indirectly implies that low levels of empowerment are associated not only with increased strain but also with increased error in nursing performance.

Typically, the modern intensive care unit will have a dedicated medical director, a nurse manager, and a multidisciplinary critical care team that oversees patient care. In these settings, the physician will make all diagnostic and therapeutic decisions. The more that critical care patients are transferred to other healthcare settings; only the most acute patients remain in the hospital. Concurrently, the reduction in staffing levels leaves critical care nurses with increased workloads, responsibility, and less autonomy.

The most common approach in dealing with psychological strain in the workplace is reactionary: to attempt to fix it after it has occurred. The more effective way to deal with psychological strain in the workplace is to give employees more control over their work through empowerment (Clegg, 2001). This may prevent psychological strain from occurring in the first place and has the added benefit of promoting better organization performance (Health Resources and Services Administration, 2001). As a result, researchers are beginning to target the importance of environmental characteristics such as support for autonomous decision-making and relations with physicians and other departments (Clarke, 2003).

The related literature illustrates the link between empowering work environments, reduced psychological strain and performance in a variety of settings. Organizations have turned to empowerment as a means to encourage employees to work to their fullest potential. Theories
espousing empowerment typically suggests that this treatment benefits the organization as well as the individual (Beehr, 1995).

Environmental empowerment has been associated with psychological empowerment and reduced job strain (Beehr, 1995). Studies have shown that empowered work teams have increased productivity and efficiencies over those who perceive that they have a low or non-existent amount of influence over decisions and find their jobs stressful. Studies have also shown that the higher the perceived amount of influence over areas of work the greater the level of job satisfaction and lower levels of job strain (Boss, Koberg, Goodman & Senjem, 1999). Thus, effectiveness on the job is a key anticipated outcome of employee empowerment (Thomas & Velthouse, 1990). Because a sense of empowerment helps individuals experience greater personal control over their own work, they are more likely to be better able to manage any accompanying strain. Thus, reduced job-related strain is a key outcome that may be influenced by employee empowerment (Thomas & Velthouse, 1990).

A study by Finegold & Laschinger (1993) concluded that empowered employees that have control over how they perform considerably reduced their risk of stress and burnout. Tucker (1997) suggested that individuals who feel that they are in control of their jobs and their futures are better able to handle stress. Researchers also found that competence results in increased effort and persistence in challenging situations (Savery & Luks, 2000; Spreitzer, 1995), and self-determination results in increased learning, interest in activity, and resilience in the face of adversity (Deci & Ryan, 1987).

Clegg (2001) found that perceived work autonomy had a direct effect on work satisfaction, which in turn, directly affected how patients experienced their care from the nursing staff. Viewing these factors in reverse, they are closely related to the positive antecedents of
reduced psychological strain suggested by Spreitzer (Spreitzer, 1997). For instance, having no sense of meaning (patient care) for one’s job and not having a sense of impact (lack of professional latitude) from one’s work increases psychological strain (Laschinger & Spence 2001).

Laschinger (1999) found that staff nurses felt more empowerment in their work setting when their leaders encouraged autonomy, facilitated participative decision-making, and expressed confidence in employee competence. Laschinger and Havens (1996) examined the effect of job-related empowerment on staff nurses’ occupational mental health and overall work effectiveness and found positive relationships. Individuals with access to the empowerment structures demonstrate more effective work behaviors and decreased levels of strain (Almost, 2000; Laschinger, Finegan, Shamian, & Wilk, 2001). Using a scale based on Kantar’s environmental empowerment structures, researchers found that perception of environmental empowerment was a significant predictor of psychological empowerment and job strain (Almost, 2000; Laschinger, Finegan, Shamian, & Wilk, 2001).

Health care reforms have included changes in the roles of critical care nurses. Numerous studies have already shown that critical care nurses provide high quality, cost-effective care that results in high levels of patient care (Hass, 2005 Savery & Luks, 2000;). However, because of nursing shortages and downsizing the continued delivery of high-quality care requires critical care nurses who are empowered to be effective in their roles (Almost & Laschinger, 2002). In conclusion, the significance of the problem is clear in that nurse’s psychological strain is worsening and is related to poor performance and ultimately life or death for patients. It is imperative that healthcare research focus on how workplace dimensions, such as those found in
the construct environmental empowerment, and psychological empowerment, influence psychological strain.

**Purpose of the Study**

The purpose of the present study is to examine the impact of psychological empowerment and environmental empowerment on the psychological strain of critical care nurses. There are three specific objectives of the present study: a. To determine the perceptions of empowerment and psychological strain in critical care nursing, b. To assess the relationship between high levels of empowerment (determined as being 1 standard deviation above the mean) and low levels of empowerment (determined as being 1 standard deviation below the mean) with psychological strain and c. To determine the specific dimensions of empowerment that are associated with reduced strain. Demographic information including age, gender, part-time or full-time status, number of years on the same critical care nursing unit, position (manager or not), critical care specialty, education and total number of years working in critical care nursing environments will be provided so that comparisons can be made to similar nursing populations. The findings of this study will benefit nursing leaders in their efforts to create work environments that enable critical care nurses to provide excellent quality patient care.

The present study uses Randolph & Blanchard’s (1997) environmental empowerment construct which consist of three dimensions: (1) Information sharing, (2) Clear Structures and (3) Team Accountability (Randolph & Blanchard 1997), and Spretzer’s (1995) psychological empowerment construct using four dimensions: (1) Meaning, (2) Competence (3) Impact and (4) Self-determination (Spreitzer, 1997; Thomas & Velthouse, 1990). The present study sought to determine the extent that the dimensions of environmental empowerment and psychological empowerment are related to and predictive of psychological strain.
Research Questions

In support of the problem and purpose of the study two research questions are offered:

Research Question #1. Do nurses who perceive high environmental empowerment and high psychological empowerment report less psychological strain than nurses who perceive low environmental empowerment and low psychological empowerment (means, standard deviations, t-tests and if significant, Cohen’s d for magnitude of effect)?

Research Question #2. What is the predictive power of psychological empowerment (meaning, impact, competence, determination) and environmental empowerment (Factor 1 – clear structures and team accountability; Factor 2 – information sharing) on psychological strain of critical care nurses?

Definition of Terms

The following section will provide the theoretical definitions for each term. Chapter two will provide more detailed information about the terms.

Environmental Empowerment

The definition of Environmental empowerment is based on Randolph and Blanchard’s (1995) theory as a set of shared perceptions regarding the workplace. Environmental empowerment has three dimensions: (1) information sharing, (2) clear structures and (3) team accountability that an organization rewards, supports, and expects (Blanchard, Randolph & Carlos 2001; Burke, 1987) This term was measured by combining scores for both the three dimensions separately and as a single construct.

Psychological Empowerment

Psychological empowerment is defined as an individual’s experience of intrinsic motivation that is based on cognitions about him/her in relation to his or her work role (Spreitzer,
Psychological empowerment has four dimensions: (1) meaning, (2) competence, (3) Impact and (4) self-determination (Spreitzer, 1995).

**Psychological Strain**

The definition of Psychological Strain based on the Transactional Process model. Psychological strain is categorized as psychological, physical and behavioral responses (measured symptoms) to stressors in the workplace considered harmful (Osipow, 2003).

**Limitations and Assumptions**

The present study is limited to the critical care nurses in two branches of one major hospital of one large healthcare organization in the Southeastern United States. Thus, the generalizability will be somewhat limited to a similar population although it can be argued that this hospital was found to be very representative of other major hospitals of similar size. It is also nearly impossible to randomly sample hospitals given that full institutional support is required for research to take place. The purpose of survey research is well suited for the present study that aims to make useful generalizations from a sample of critical care nurses to other similar critical care environments.

There are limits to a survey because they typically cannot probe deeply into respondents’ opinions and feelings. Another limit to survey research is that once the survey has been piloted, validated and distributed, it is difficult to modify the items, even though they may be unclear to some respondents. There are assumptions related to self-report scales that participants are responding truthfully and that the instruments are valid, reliable, and reading-level appropriate.

There were no national comparisons based on the results of the survey and this was not in any way a measurement of nursing performance. There was no comparison group in the present study that could allow for the control of extraneous variables. There is also the limitation that the
sample was not random. Some of the respondents know the researcher and so they have been more or less likely to respond to the survey than they would if they had not known the researcher.

Based on the literature review the population for the present study some similar to the demographics of critical care nursing populations in general in the U.S. The assumption was that the similarities were accurate enough to make inferences from this study and population to other critical care nurses, even though no randomization was used (sample of convenience). Inferential statistics, especially in the social sciences are commonly used to analyze data collected from convenience samples, even though the logic of inferential statistics requires that the statistics be randomly drawn from a defined population. Because the sample in the present study is representative of this population, the sample is equivalent to a sample randomly drawn from the population; therefore, the use of inferential statistics is justified (Gall, Borg & Gall, 1996; Burke, 2001).

Cohen (1988) suggested that inferential statistics could be used with data collected from a convenience sample if the sample is carefully conceptualized to represent a particular population that is the case of the present study. Nonetheless, the limitation is that there should be caution about accepting findings as valid and making generalizations about them based on one study (Gall, Borg & Gall, 1996). The present study surveyed all 350 critical care nurses at one hospital, which limits the possibility of generalizing to other kinds of nursing care. Additionally, the present study is based on literature only in the United States. The best estimate for using the present study is to generalize its results to critical care nurses in a very similar large hospital. In order to reduce the risk of deception, the purpose of the study was clearly explained to the subjects. In order to prevent putting any employee at risk and to meet established protections of
human subjects, this study was reviewed and approved by two Institutional Review Boards, one at North Carolina State University and one at the hospital used to collect data. A written informed consent was provided (Appendix H) to all participants acknowledging that their rights had been protected during data collection. During collection and analysis, only the researcher of the present study had access to raw data. Following analysis, the data was destroyed. A small sample can be problematic for providing information about how reliable an instrument is and for measuring outcomes. Because the sample is relatively small, the instruments used in the present study could appear unreliable even though it provides precise and accurate measurements of the participant group in this study.

Summary

While there is an emerging body of empowerment research that has made some important first steps in establishing the validity of the empowerment construct, a deeper understanding of its multidimensional nature is needed. There is still little evidence of the relative value added of the multidimensional conceptualization of empowerment, particularly environmental empowerment, beyond more simple one-dimensional conceptualizations. The previous research described has examined how an overall empowerment composite relates to various outcomes, but there is little understanding regarding if and how specific dimensions contribute to the expected outcomes of empowerment. The present study builds on and extends the emerging literature empowerment by reviewing the literature and empirically examining the relationships between each of the four dimensions of psychological empowerment and three dimensions of environmental empowerment and psychological strain in the critical care nursing.
Chapter Two: Review of the Literature

This section presents literature on environmental empowerment (heading: *Environmental Empowerment*), psychological empowerment (heading: *Psychological Empowerment*) and Psychological strain (heading: *Psychological Strain*). Section four presents literature on the overall nursing context. In each section, the development of each construct is presented with literature that supports the dimensions of the constructs. The second section presents information regarding the dependent variable, psychological strain. The third section relates the constructs of environmental empowerment, psychological empowerment and psychological strain in nursing.

To illustrate how the three constructs have been used together in nursing, a literature graph is presented in Figure 2. This chapter also provides justification for the choice of empowerment and psychological strain for study in nursing environments. The referenced research is consistent in finding that nursing strain is a growing problem with hazardous consequences.
Section 1 Independent Variable Environmental Empowerment
This section will provide information about environmental empowerment, related theories and literature that supports each of this constructs dimensions (clear structures, team accountability and teamwork). More specifically, related theories in the development of the environmental empowerment construct are presented. The next section provides information regarding current empowerment developments and research. The final sections include literature to support the conceptual framework for each of the environmental empowerment dimensions of clear structures, information sharing and team accountability and the context of the study.

Related Theories in the Development of the Environmental Empowerment Construct

Environmental empowerment has its roots in industrial organization research with focus on empowering management practices, delegation of decision making from higher organizational levels to lower ones and increasing access to information for all employees (Spreitzer, 1995; Laschinger & Spence, 2001; Nelson, 2001). The concept is also rooted in such substantive issues as intrinsic motivation, job design; participative decision-making, climate theory, social learning theory, and self-management (Savory & Luks, 2001; Randolph, Seibert, & Silver, 2004). In particular, participative management was influential by arguing that managers should share decision-making power with employees to enhance performance and work satisfaction (Spreitzer, Kizilos, & Nason, Cotton, 1993;).

Climate theory is of particular interest to this study and to the development of the environmental empowerment (Randolph, Seibert, & Silver 2004). Organizational climate is defined as a set of shared perceptions regarding the policies, practices, and procedures that an organization rewards; supports, and sets clear expectations (Burke, 1987). Climate research has led to applications in OD, process consulting and culture change initiatives much like the most recent environment empowerment initiatives. These include assessing the depth of impact or
progress of culture change programs, providing a tool to link the design of reward and benefit systems, providing goals for team building, helping top teams articulate strategic and structural changes, establishing cultural imperatives for technological changes and identifying future management competencies.

Probably most influential to the development of the empowerment construct is Bandura’s (1986) construct of self-efficacy. Common to all empowerment definitions is the construct of self-efficacy as derived from Bandura’s (1986) social cognitive theory, which focused on motivation. Later, Thomas and Velthouse (1990) borrowed from that literature and proposed four cognitions, including motivation and self-efficacy, in their definition of psychological empowerment. While self-efficacy formed the basis of the empowerment construct, particularly the psychological empowerment construct, key researchers in the field found that it did not complete the definition of empowerment.

Bandura (1977) developed the social cognitive theory (SCT), which offered several major advances for the field of psychology and, organizational behavior (Brink, Bengtsson & Olofsson, 2003). The theory proposes that learning is a knowledge acquisition through cognitive processing of information. The social part acknowledges the social origins of much of human thought and action (what individuals learn by being part of a society), whereas the cognitive portion recognized the influential contribution of thought processes to human motivation, attitudes and action and as a judgment of one’s ability to execute a particular behavior pattern. Self-efficacy theory is an important component of Bandura’s (1986) more general social cognitive theory that suggests that an individual’s behavior, environment, and cognitive factors (i.e. outcome expectations and self-efficacy) are all highly interrelated.
Self-efficacy refers to an individual’s conviction about his or her abilities to mobilize the motivation, cognitive resources and courses of action needed to successfully execute a specific task within a given context (Bandura, 1986; Edwards, Green, and Lyons, 2001). Before they select their choices and initiate their effort, employees tend to weigh, evaluate, and integrate information about their perceived capabilities. Expectations of personal efficacy determine whether an employee’s coping behavior is initiated, how much task-related effort will be expended, and how long that effort will be sustained despite disconfirming evidence.

Bandura (1986) expanded on this definition by suggesting that self-efficacy beliefs form a central role in the regularity process through which an individual’s motivation and performance attainments are governed. Ultimately, the construct of efficacy as defined by Bandura (1977) conceptually forms the basis for empowerment as a related construct.

Early on, empowerment was considered in two ways depending on whether empowerment was considered a relational or motivational construct and by the use of power and control. The psychological literature used power and control as expectancy belief states that are internal and motivational to individuals. They assert that individuals’ power needs are met when they perceive that they have power or when they believe they can adequately cope with events, situations and/or the people they confront. In the psychology literature, power and control were related to the self-efficacy construct and used as the motivational and/or expectancy belief-state that are internal to individuals. Power in this motivational sense refers to an intrinsic need for self-determination or a belief in personal self-efficacy (Bandura, 1986).

In the management and social influences literature, power was primarily a relational concept used to describe the perceived power or control that an individual actor or organization has over others (Conger & Kanungo, 1988). According to management literature, to empower...
implies the granting of power through the delegation of authority. Power in this motivational sense refers to an intrinsic need for self-determination or a belief in personal self-efficacy (Bandura, 1986).

In the management literature, this idea of delegation and the decentralization of decision-making power are central to the empowerment notion (Burke, 1986). Often both meanings are fused, and their relationships to each other are not clear. Beehr (1995) considered empowerment as giving subordinates resources as increasing their sense of self-worth (Conger & Kanungo, 1988). Burke (1986) recognized the distinctiveness of the two meanings but like most management researchers preferred to use empowerment in the sense of delegation rather than in the sense of enabling. He proposed that empowerment be viewed as a motivational construct of enabling rather than simply to delegate. Empowerment also is viewed as an enabling, rather than a delegating process, while enabling implies creating conditions for heightening motivation for task accomplishment through the development of a strong sense of personal efficacy (Conger & Kanungo, 1988).

Thomas and Velthouse (1990) also recognized that in the management literature on power and empowerment, often both meanings were fused together, and their relationships to each other are not clear. Thomas and Velthouse viewed empowerment as enabling rather than a delegating process. They suggest that the process of delegation is only one set of conditions that may enable or empowered subordinates. They defined empowerment as a process of enhancing feelings of self-efficacy and internal motivation.

Conger and Kanungo (1988) took an important step toward clarifying this concept. These authors recommended that empowerment be defined in terms of motivational processes in workers from the psychological literature and the social cognitive literature of Bandura (1977).
This approach allowed researchers to study the empowering effects of different interventions, while being more explicit about what those effects are.

More specifically, Conger and Kanungo (1988) proposed that empowerment be defined as increases in workers effort performance expectancies using Bandura’s (1977) term, feelings of self-efficacy. Empowering interventions, therefore, enable workers to feel they can perform their work complementally. This empowering experience, in turn is asserted by Conger & Kanungo (1988) to increase both initiation and persistence of subordinates task behavior. They preferred Bandura’s model where empowerment refers to a process whereby an individual’s belief in his or her self-efficacy is enhanced. They contend that the process theory approach to empowerment as a motivational phenomena by relating it to expectancy (Lawler, 1983) and self-efficacy theories (Bandura, 1986). So while in the early literature there were multiple meanings of empowerment (Kanungo, 1987) in practice, empowered employees have a high sense of self-efficacy, are given significant responsibility and authority over their jobs, engage in upward influence and see them as innovative (Conger and Kanungo, 1988).

Thomas and Velthouse (1990) further developed the general approach taken by Conger & Kanungo (1988). They conceptualized empowerment in terms of task changes in cognitive variables that determine motivation in workers and developed a more complex cognitive model. They worked to improve Conger and Kanungo’s model in three ways. First, the concept of empowerment as motivation is made more precise by identifying empowerment with a type of motivation, referred to it as intrinsic task motivation. Second, they specified a more nearly complete or sufficient set of task assessment that produces this motivation.

Spreitzer (1995) built upon Thomas and Velthouse’s (1990) model and validated a measure of psychological empowerment. Her measure included scales for each of the four
empowerment dimensions. She defined Impact as the degree to which an individual can influence strategic, administrative or operating outcomes at work; Competence as an individual’s belief in his or her capacity to perform activities with skill and noted that this concept was synonymous with Conger and Kanungo’s (1988) focus on self-efficacy. She defined Meaning as the value of a work goal or purpose, judged in relation to an individual’s own ideals or standards; and Self-determination (referred to as choice by Thomas and Velthouse) as reflected in autonomy in the initiation and continuation of work behaviors and processes.

Thomas and Velthouse (1990) recognized that since organizations struggle to compete in an increasingly competitive external environment, there is a need for alternative forms of management that encourage commitment, risk-taking and innovation (Kanter, 1983). This trend has been especially apparent in the fields of leadership and organizational climate, where research has shown how transformational and charismatic leaders can energize workers by tapping idealism and building faith in the ability to accomplish meaningful goals (Thomas & Velthouse, 1990).

With these interests in mind, one of the first researchers to study environmental empowerment empirically in nursing was Rosabeth Kanter (1993) who argued that employees’ behavior is a reaction to the situation in which they find themselves and that the impact of organizational social structures on employee behavior is far greater than the impact of employee personality characteristics. The social structures within organizations that Kanter believes are particularly important to the growth of empowerment include access to resources necessary to do the job, and the opportunity to learn and grow (Laschinger, & Spence, 2002).

Laschinger, McDermott, & Shamian (1996), used Kanter’s (date) structural theory of organization behavior to examine the relationship between job-related empowerment perceptions
of staff nurses and their commitment to the organization. These authors argue that an 
individual’s effectiveness on the job is a result of structural aspects of the job itself. There was a 
significant relationship between nurses’ perceptions of job-related empowerment and their 
reported commitment to their organization. If this can resemble control, we know that sense of 
control is positively associated with management of psychological strain. When managers have 
ready access to resources, information, support and opportunity, they are more likely to share 
their power with the people they supervise (Kanter, 1993), which fully supports the notions of 
Randolph and Blanchard

**Current Empowerment Developments and Research**

This subsection serves to introduce recent and relevant empowerment developments and 
research. Edwards, Green & Lyons, (1996), present some common denominators that are 
consistent in the definitions of empowerment in a variety of work settings. Their research 
examined the personal empowerment and efficacy of teachers and related those constructs to 
environmental characteristics. They used Vincent empowerment scale with the School Culture 
Survey, the Teacher Efficacy Scale, Learner Centered Battery, and a paragraph completion 
method. Multiple regressions were moderate for all variables. One of the most significant 
predictors of personal empowerment was professional treatment and communication with 
teachers. Most education research suggested that teacher empowerment consisted of three 
elements: improved status, increased knowledge and access to decision making which are similar 
to definitions seen by other theorists including Randolph and Blanchard.

Savory and Luks (2001) examined the relationship between empowerment, job 
satisfaction and reported psychological strain. The purpose of this study was to measure what the 
effect empowerment might have in overcoming the workplace issue of psychological strain and
health brought about by organizational downsizing. The results were based on research data from the 1995 Australian Workplace Industrial Relations Survey; the main survey took a stratified sample from a population of 2001 workplaces.

This article is very relevant to the current study in that it discusses the global changes that are influencing healthcare and the health of employees in uncertain downsized environments. These researchers identified the impact of downsizing on psychological strain as the key problem in nursing settings and emphasized the detrimental effect on the health of employees (Savery & Luks, 2000). The research literature review found that some of the causes for this increase in health problems are the psychological strain related to the increase in perceived job insecurity, job demands and decreasing job control (Boss, Koberg, Goodman & Senjem, 1999). Similar to Blanchard’s dimensions, these researchers mention Thorlakson and Murray (1996) who proposed more than one purpose of employee empowerment. They suggest that it is not only to ensure that employees make effective decisions but also to provide a mechanism by which responsibility for those decisions rests with individuals and teams, thereby increasing their sense of control and reducing the likelihood of psychological strain related problems.

These researchers also mention Savery and Luks (2000) whose research has shown that organization change, downsizing, and restructuring, often leads to psychological strain and an increase in injury/illness. Many researchers define psychological strain as mental and physical conditions, which affect an individual’ productivity, effectiveness, personal health and quality of work (Savery and Luks, 2000). The most common approach to dealing with psychological strain is to fix it after it has occurred rather than giving employees more control over their work to potentially prevent psychological strain related problems (Savery and Luks, 2000).
They also mention a study by the Northwestern National Life Insurance Company that concluded that job psychological strain is generally a consequence of two ingredients: a high level of job demands and little control over one’s work. The study concluded that where employees are empowered and have more control over how they perform their work, the risk of psychological strain and burnout is reduced considerably (Finegold & Lawler, 2003). This also supports work by Tucker (1997) which showed that individuals who feel that they are in control of their jobs and their futures are better able to handle psychological strain and that these empowered workers become more productive.

They also mention Dempsey & Larson (2004) who reported in his studies that empowerment resulted in innovation, increased productivity, efficiencies, and customer satisfaction. These studies were re-confirmed in other settings with similar results. The key findings in this study were that people who perceive that they have a low or non-existent amount of influence over decisions appear to find their jobs psychologically straining. The results show that as perceived amount of influence over areas of work increases, the level of job satisfaction increases and job psychological strain decreases.

**Conceptual Framework for Environmental Empowerment**

This section will first generally introduce the conceptual framework for the construct environmental empowerment. The development of the construct will be presented with literature that supports the components of clear structures, information sharing and team accountability. This section serves the purpose of presenting the construct and literature supporting its development but also serves to argue the use of the construct in the present study. Blanchard developed a theory in 1997 and it was used to study the environmental factors of empowerment much like organizational climate theories, participative management and motivational theories.
This theory indicates that environmental factors will fall into one of three categories; information sharing clear structures (originally called “Autonomy through Boundaries” and changed to “clear structures” after the factor analysis was completed for the present study) and team accountability. These three dimensions are used in the present study to measure the empowerment construct. Randolph and Blanchard present one of the leading environmental empowerment theories that are supported in research across a variety of settings.

The theory suggests three stages of empowerment and three dimensions of empowerment. The general idea of empowerment is to give employees more power to make their own decisions, without the involvement of middle management. They suggest that the global economy is constantly changing with a race to beat the competition and keep up with the latest technology.

Blanchard (1997) encourages business leaders to rely on an explicit recognition that people in organizations have tremendous power in their experience, knowledge, and internal motivation. He proposes the three dimensions of empowerment as follows; information sharing clear structures and team accountability.

Boss, Koberg, Goodman & Senjem, (1999) suggest that managers seeking information on empowerment must also understand how to implement what they have learned. This is also an argument for the use of Randolph and Blanchard’s model in nursing which is designed for managers to both assess and respond to empowerment initiatives.

These researchers analyzed employee resistance to an organizational change project in which employees were empowered to participate in the design of a new organizational structure. They discovered a number of cognitive barriers to empowerment that many empowerment models do not address. They found that resistance appeared to be motivated by the constraints of
well-established, ingrained schemas. They explained that resistance was fueled by skepticism among the employees about management’s commitment to the new decision-making schema. They offer theoretical implications and suggestions for improving organization change efforts. Despite increased organizational efforts to empower employees, change efforts often fail because they neglect both levels of empowerment. This provides the second reason for its importance in that it supports the notion that empowerment cannot be addressed by one dimension. The article is also applicable to the present study because it not only addresses the dimensions of empowerment but how to implement a change process for implementing an empowerment culture. Additionally, the organization studied is a healthcare setting and it addresses the implementation of empowerment dimensions similar to the ones used for this author’s work.

The study analyzed a two-year organizational development project involving the redesign of a health care organization’s structure, team building and increased participation of lower-level employees in decision-making. The setting for this research was a university health center located in the Northeast. The purpose was to understand why efforts by management of empowered workers are often met with so much skepticism and to learn how employees themselves interpreted management’s efforts to include them in decision-making.

Brink, Bengtsson & Olofsson(2003) suggest that empowerment is not achieved simply by soliciting employee input, but by gradual and continual confirmation of proposed new schemas through enacted behavior by management and employees. Like Randolph and Blanchard’s (1997) theory, they consider empowerment as a tool in determining the present level of empowerment but also in establishing a way to incorporate the empowerment effort as proposed in this article. This article suggests several recommendations for managers and change agents
engaged in empowerment efforts that involve shifts in schemas that closely resemble Randolph and Blanchard.

In the study, data was gathered on 93 organizations and over 3030 individuals using a climate survey. The Business and Organization Climate Index was analyzed statistically in order to examine the practicality and validity of using organization climate maps as part of a typical management of change intervention. The findings showed that the instrument could be used to create a reliable average profile with high degrees of inter-rater reliability. Given that climate surveys reflect individual perceptions, the eight climate maps may be as strong a measure of managers and workers cognitive frameworks and judgments, as they are representations organization behavior and action.

The article is particularly relevant given that much of empowerment dimensions have resembled climate dimensions and because it discusses the problems and success of measuring it. These researchers explain that climate survey data usually examine management style, espoused values and permitted behaviors. Most relevant are the applications such data have provided for organizations that included a strong focus on teams and management styles.

The abstract for an article written by Yeh-Yun Lin, (1998) is well written and closely matches the statements and interests for the present study. This study attempted to define empowerment from various perspectives and proposes a conceptual model that serves to delineate its key elements in an organizational setting. The author begins by illustrating organizations’ previous and failed attempts to use management programs that promise competitive advantages. Only a third of such endeavors, such as total quality management downsizing restructuring, bench marking and re-engineer, have actually produced the expected results (Yeh-Yun Lin, 1998). Based on previous research she suggests that empowerment has
been noted as an important feature of successful management (Kanter, 1993). She compiled her findings of how empowerment is defined and identified four dimensions: empowering leaders, empowering culture, empowered employees and empowering practices.

Most notable and relevant to this author’s study is that in her synthesis of empowerment definitions and constructs, she speaks highly of the three used by Blanchard and the four outlined by Spreitzer. She includes self-managing teams, open communication channels employee’s participation, management team meetings, and information sharing. General management should consider people as the most precious assets and the once a person is carefully selected, that person has full authority and autonomy to carry out assigned tasks. Her scale proved to be valid and reliable.

Randolph, Seibert & Silver (2004) wrote an article “Taking Empowerment to the Next Level: A Multiple-Level Model of Empowerment, Performance, and Satisfaction” that is an important and influential article for the development of the present study. Blanchard and Randolph completed this research in 2004 to study empowerment climate as defined with the psychological empowerment construct of Spreitzer’s (1995). They support the need for research on environmental empowerment claiming that virtually all of the empirical research to date has been the examination of psychological empowerment. To their knowledge, no empirical research had been conducted on empowerment as a macro construct reflecting managerial structures and practices.

They created their own name for the construct built by Blanchard and Randolph and refer to other researchers that have revealed a degree of consensus on organizational structures and policies associated with empowerment that parallel with Blanchard’s (Blanchard, Carlos & Randolph, 1999). Again, it is this article that inspired the present study because of the interest in
designing an environmental empowerment construct and because of the research that directly or indirectly shows promise in the dimensions of Blanchard’s construct. The present study went beyond previous empowerment research in three ways. First, they conceptualized the macro dimensions of empowerment as a “climate” construct, which they named “empowerment climate” and defined it in terms of employees’ shared perceptions of managerial structure, policies, and practices related to empowerment. Second, a multiple-level model of empowerment that specifics effects on important work-unit and individual outcomes was developed and tested. Third, they hypothesized a mediating role for psychological empowerment in the relationship between empowerment climate and the individual level outcomes in the model.

The literature review provided by these researchers included an entire section on climate theories that define it as the meanings employees ascribe to the overall pattern of organizational activities. Based on climate research, they defined empowerment climate as a shared perception regarding the extent to which an organization makes use of structure, politics and practices supporting employee’s empowerment. They also distinguished between psychological empowerment and personality. Psychological empowerment has been defined as an individual’s experience of intrinsic motivation that is based on cognitions about him-or herself in relation to his other work roles (Spreitzer, 1995). While these cognitions are related to the psychological state of individuals, psychological empowerment is designed to emphasize individual’ subjective experiences of empowerment; measures of the construct ask respondents to use their own personal values, background experience, and self-concept as frames of reference in forming judgments about their work environments. Traits are enduring dispositions not immediately influenced by such contextual factors (Spreitzer, 1995). They also explain the distinction
between empowerment climate and psychological empowerment. They go on to say that empowerment climate refers to a work environment, while psychological empowerment refers to an individual’s internal psychological state.

They used individual-level data from 375 employees in a Fortune 100 manufacturer of high-technology office and printing equipment located in the northeastern United States. They were organized into project teams and composed of mixes of different types of engineers. Respondents completed surveys that assessed their perceptions of empowerment climate, psychological empowerment, and job satisfaction. They measured empowerment climate using the same instrument developed by Blanchard and his colleagues (Blanchard & Randolph, 1995) that will be used in the present study. Psychological empowerment was measured by Spreitzer’s (1995) empowerment tool that will also be used in the present study. In summary, they consider their results to support the multiple-level conceptualization implicit in the literature and suggest that empowerment climate must be considered an important aspect of an organizations effort to foster employees’ experiences of psychological empowerment.

The results also showed that work-unit empowerment climate is positively related to work-unit performance outcomes. The results also indicated that psychological empowerment mediates the effects of empowerment climate on job satisfaction and is a link in an indirect relationship between empowerment climate and job performance. Most important to them as well was their confirmatory factor analysis that showed that the dimensions of empowerment climate eluded onto a single higher-order factor was distinct from psychological empowerment. The limitations are also important for this study, which identified poor discriminate validity among the dimensions, which limited the ability to examine more detailed relationships between empowerment climate and psychological empowerment. They suggested that future research
should develop and test new items in order to refine the level of discriminate validity among these dimensions. They also suggest that the term autonomy through boundaries is confusing and suggest that an updated version of the scale might rename this dimension to better reflect the actual content. Future research might seek to expand the conceptualization of empowerment climate used in this study by identifying other managerial structures and practices that might be incorporated into the construct. These suggestions spurred one of the aims of the present study to create an improved scale specifically for nursing.

Blanchard, Zigarmi & Zigarmi (1985) mention Blanchard and his colleague’s book, Leadership and the One Minute Manger: Increasing Effectiveness through Situational Leadership. This book does not speak directly to the concept of empowerment except that the style of leadership that they presented is now considered a management strategy for implementing empowerment. Most relevant is that managers should think more about teams in organization structures rather than in a pyramid and should recognize the need for change in management style as the development and confidence level of the worker changes.

Blanchard’s three dimensions of empowerment team autonomy, clear structures and information sharing are supported in his own studies and in other related studies. In addition, while some theorists have attempted to lengthen the list of environmental dimensions and others have chosen components based on specific contexts, Randolph and Blanchard’s appear to umbrella most of those components previously proposed in the three key categories. For example, “communication” and “general relations with the company” issues fit well into Blanchard’s team skills and “decision making or participative management” fit well into his autonomy through boundaries. He argues that information sharing is the first step because if
employees are kept in the dark about the company they cannot feel fully empowered to act regardless of other measures taken to enhance empowerment.

Chandler (1991) developed a definition of empowerment that included three dimensions similar to those of Randolph and Blanchard (1995), autonomy, participation and responsibility. Roller defines autonomy as an individual’s perception of the level of freedom and personal control that he or she possesses and is able to exercise in performing job tasks (Personal communication, February 28, 2006). Participation measures perceptions of influence in producing job outcomes and the degree to which employees feel they have input into organizational goals and processes. Responsibility measures the psychological investment an individual feels toward his/her job and the commitment he/she brings to the job. The scale that was developed is called the Perception of Empowerment Instrument. The internal consistency ranges from .80 to .87 and criterion-related validity reported was .82.

There are only a few environmental empowerment scales that have been developed specifically for nurses. This includes the Conditions of Work Effectiveness Scale (CWEQ). These scales are all based on Kanter’s (1993) theory of environmental empowerment which proposed that the extent to which critical care nurses have access to information, opportunities for advancement, and collaboration and support have higher levels of workplace empowerment. The Job Activities Scale (JAS), and the Organizational Relationship Scale (ORS The JAS and ORS have been found to be strong predictors of the CWEQ scores in several independent studies (Laschinger & Havens, 1996; Govers, 1997; Laschinger & Wong, 1999) and can be used as separate scales to measure particular aspects of job-related empowerment if the researcher is interested in the separate components.
Almost (2002) examined environmental empowerment on psychological strain in critical care nurses specifically. They completed a predictive, non-experimental study to support the proposition that the extent to which critical care nurses have access to information, opportunities for advancement to more autonomous positions, and collaboration and support from surrounding staff will have significantly higher levels of workplace empowerment and lower levels of psychological strain.

While the instruments used in this study are not the same as the ones used to measure these same variables in the present study, the definitions are closely related and important. Like a lot of critical care nursing research, they used Rosabeth Kanter’s model that argued that structural factors in the workplace influence employees’ perceptions of empowerment and psychological strain and not inherent personality traits or socialization experiences.

The structures within organizations that Kanter (1993) proposed as important for employee empowerment are having access to opportunity, resources, information and support. The opportunity for opportunity is determined by the access to challenges, rewards, and professional development. Access to resources refers to the capacity of individuals to access the supplies, time, and equipment required to accomplish their work. Having access to information is having access to organizational goals, including the data, technical knowledge, and expertise required to function effectively in one’s position within the broader context of the organization (Kanter, 1993). Support encompasses the feedback and guidance received from superiors, peers, and subordinates.

The results of this study suggested that the combined effect of workplace empowerment and collaboration with peers explained 43% of the variance in job strain for critical care nurses ($R^2=.43$, $F(3,57)=16.32,p=.0001$). Workplace empowerment, using Kanter’s (1993) model,
was the only significant predictor of job strain (B=-.670, t=5.63, p=.0001). They also included a
correlation analysis that revealed that workplace empowerment was positively related to
collaboration (r=.415, p=.0001) and negatively related to job strain (r=-.686, p=.0001). It
was suggested that the intercorrelations among the independent variables may account for the
lack of independent prediction of the factors (Kanter, 1993).

Chandler (1991) first developed the Conditions of Work Effectiveness by testing
Kanter’s original survey items but adapted them to nursing populations and performed extensive
psychometric testing of the instrument. The Conditions of Work Effectiveness Questionnaire-II
(Laschinger, Finegan, Shamian, & Wilk, 2001) and consists of 19 items that measure the six
components of structural empowerment in nursing described by Kanter (opportunity,
information, support, resources, formal power, and informal power). Using the CWEQ-II, studies
have found perception of workplace empowerment to be a significant predictor of psychological
empowerment, organizational commitment, autonomy, job strain, job satisfaction, and
collaborative behaviors (Almost, 2000; Laschinger & Havens 1997; Laschinger, Finnegan,
Shamian, & Wilk, 2000).

Chandler’s work stimulated further testing of Kanter’s theory in the nursing population
and provided the basis for Workplace Empowerment Programs at the School of Nursing,
University of Western Ontario (UWO). The Organizational Relationships Scale (ORS)
(Laschinger, 1996) is an 18-item instrument that measure staff nurses’ perceptions of informal
power within the work environment. Items are designed to measure perceptions of political
alliances, sponsor support, peer networking, and subordinate relationships in the work setting.
Content validity was established through pilot testing of the instrument with a convenience
sample of registered nurses.
Kanter’s model is relevant as it outlines a model of environmental empowerment similar to the one used for the present study that has been frequently used in nursing. The similar dimensions are opportunity (somewhat similar to Randolph and Blanchard’s autonomy dimension), access to information (very similar to Randolph and Blanchard’s information sharing) and support (similar to Randolph and Blanchard’s team accountability). While this model could theoretically been appropriate for this study, because the nursing shortage is a primary threat to nursing the dimensions of autonomy, team accountability must be in sharp focus as each nurse, and nursing unit is increasingly responsible for more patients and more critically ill patients.

**Literature supporting the dimension Information Sharing.**

Randolph & Blanchard (1995) synthesized the literature that supports the three keys to empowerment. They divided the literature into three sections where he included a literature review and examples from his own research from 10 companies with a variety of methods over a period of eight years.

Sharing information is defined as sharing company performance information, helping people understand the business and building trust through sharing sensitive information. He explains that people need information to know how they and the company are doing, and if their actions are making a difference. There are many articles and research that support this notion. Without the accurate sharing of information, errors are more likely and adverse working conditions can result, which indirectly impact nurses’ stress level, health and job satisfaction.

Kleiner, Roberts, Ross Senge & Smith, (1994) support Randolph’s emphasis on keeping employees informed. They present a literature review and their own study to support the idea that employee communication as the new top management priority (Harding, Monroe & Rodwell,
1998). The article refers to the results of a two-year study of firms that dealt with communication needs during restructurings and reorganizations. A study by Gardner and Siegel (2004) was included because of its close parallel in purpose and because of an important argument, it makes about the use of empowerment findings, particularly sharing information and communication. Gardner and Siegal (2004) examined the relationships between four contextual factors related to empowerment (communication with supervisor, general relations with company, teamwork, and concern for performance) and the four components of psychological empowerment (meaning, impact, self-determination, and competence) identified by Spreitzer and colleagues that is also used in the study of the present study. In the abstract, they offer the results of having surveyed 203 employees of a manufacturing firm and they found that contextual factors were found to be differentially associated with the elements of psychological empowerment.

Communication with supervisors was found significantly related to the empowerment facets of meaning, self-determination, and impact. Teamwork was found significantly related to meaning and impact (Spreitzer, 1995). Concern for performance was found to be related to meaning and self-determination. (Spreitzer, 1995). These researchers present ideas important to the entire concept of empowerment and ones that this author is also trying to convey. The first is that the concept of empowerment closely aligns with the current thrusts to gain organizational effectiveness through the wise use of human resources. They also point out that more organizations are relying on team-based designs and therefore team based empowerment efforts become increasingly important. This is the argument also made by Blanchard (1997) and Spreitzer (1995) and is included as a dimension in his environmental empowerment construct.

These authors also point out that empowerment programs have not proven successful because factors affecting empowerment are not yet well understood. Research has shown that the
outcomes of empowerment include high sense of self-efficacy, significant responsibility and
authority over their jobs, engage in upward influence and see themselves as innovative (Conger
& Kanungo, 1988; Gardner & Siegall 2000).

The literature review provides research that supported the positive outcomes of
empowerment such as improved productivity and an increase in organizational effectiveness and
employee well being. It has been shown that empowerment improves efficiency and reduced
costs on the assembly line in a transmission plant (Huston & Marquis, 2003). Furthermore,
empowerment affected employee satisfaction, loyalty, performance, service delivery, and
concern for others.

Spreitzer (1995) associated environmental empowerment with psychological
empowerment and found that low role ambiguity; strong sociopolitical support, access to
information, and a participative climate were associated with perceptions of empowerment.
These finding further supported the use of her empowerment measure and further supports the
environmental factors of Blanchard’s used for this author’s study. Spreitzer (1997) found that no
one dimension of empowerment was associated with all of the outcomes studied (effectiveness,
satisfaction, and low job-related strain.)

They concluded that a person must experience all four of the empowerment dimensions
in order for the organization to achieve its desired results. If an organization wants all of the
benefits of empowerment, it needs to provide an environment that will help create all of the
components of empowerment. Spreitzer (1997) addressed the issue of what makes empowerment
work and cited Randolph’s three keys to empowerment (used in this authors studies) that are
sharing information, communicating a vision, and teamwork. This part of their literature review
was the most relevant to the present study because it empirically supports the use of Spreitzer’s
measure in conjunction with Blanchard’s. It is one of the most important studies in choosing my scales.

*Literature supporting the dimension Clear Structures.*

The dimension clear structures means to create a clear vision and clarify the little pictures, the goals and roles collaboratively, to create new decision-making rules that support empowerment and to establish new empowering performance management processes. Randolph and Blanchard (1997) refer to a number of researchers who have supported that these three dimensions of empowerment are important to organization performance including Senge (2000) and Conger & Kanungo (2001).

Boss, Goodman, Koberg, & Senjem, (1999), used social cognitive theory to investigate the extent to which individual’s sense of empowerment is influenced by personal characteristics and work group characteristics. They investigated how a sense of empowerment affects performance and found that groups and organizational factors are at least as important as individual factors for empowerment. They point out that this confirms the management-centered view of empowerment, which proposes that managers and supervisors can help employees feel empowered by providing them with the necessary support and authority. As other researchers mentioned, the common denominator is the notion that structure and empowerment should not be seen as dichotomous. In other words, providing structure means being very clear about what needs to be done and what the boundaries are for completing those tasks.

Empowerment plays an essential role in unleashing and leveraging the human potential that resides with all organization. Public healthcare service organization are being increasingly pressured to conform to the quality and cost standards of the private sector and the threat of outsourcing activities proven to be better handled by the private sector (Chandler, 1991). This
competition requires empowered employees who can act within a clearly outlined, highly structured plan. In a recent study, Clegg (2001) tested a model in which empowerment was hypothesized to mediate the relationship between psychological climate and job satisfaction. A sample of 174 customer service employees showed that empowerment mediated the relationship between climate and satisfaction.

Clegg (2001) argues that an employee’s model must focus on individual subjective relations and an examination of the structural factors that shape those perceptions. The main hope for the present study was to provide concrete suggestions about how the work place structure can be targeted to develop feelings of empowerment. Roller (1999) also used autonomy as a dimension of environmental empowerment and defined autonomy as an individual’s perception of the level of freedom and personal control that he or she possesses and is able to exercise in performing job tasks.

In nursing, Kanter (1993) has found that having access to opportunities for advancement to more autonomous positions, for mobility and growth is highly correlated with nursing psychological strain. Almost (2000) further tested this hypothesis and found that access to positions that allowed for more autonomy were particularly true for critical care nurses. They also found in the same study that information sharing and team functioning was related to reduced perceptions in psychological strain.

The complexity of healthcare conditions includes how work is organized, workload, management and leadership style and capability, workplace characteristics, and particularly communication. Caring for patients relies heavily on human decision-making and action. Nurses are vulnerable to being part of errors because the process of patient care leaves them alone in decision making processes at the final contact with a patient within larger system. If that system
is not organized in such a way as to minimize errors with clear structures and processes, adverse effects could occur

**Literature supporting Team Accountability.**

According to Finegold & Lawler (2000), the factor most important to the demise of traditional jobs and most relevant to this study is the growing use of self-managing teams. They were present in 72% of these corporations in 1999 compared to 28% in 1987. These authors suggest that it is the team, not management that decides how the work should be divided among its members. As the team evolves and team members become more multi-skilled, the work that each individual performs often shifts to accommodate personal as well as work requirements. The research on team effectiveness indicates that a quite different leadership style is required of the individual who is managing a team (Finegold & Lawler, 2000). This relates well to Randolph and Blanchard’s definition of structure and autonomy through boundaries. This is another key point relevant to my study in that it points out both the need for teams and the need for managers to consider empowerment in management. Conger & Kanungo (2001) also suggests that organizations of the future will be built around cross-functional projects or process teams and will report to the leaders as well as their functional superiors.

He also suggests that team development includes providing direction and training for new skills, providing encouragement and support for change, gradually having managers let go of control, working through the leadership vacuum stage, and acknowledging the fear factor. He refers to several articles correlating strain with high levels of empowerment including (Blanchard, Zigarmi & Zigarmi, 1985). For instance top managers must set strategic goals, show a team how it fits into that goal, and train the team to choose its own measures. Research on
teamwork in nursing has also indicated that these dimensions of teams today are critical (Clegg, 2001).

Revere (2004) offers literature that is relevant to teams and nursing as it relates to Randolph and Blanchard’s notion of teamwork. They recognize that empowered teams can be particularly important for organizations operating in high psychological strain environment such as hospitals (Clegg, 2000). Based on a study using a model of work team effectiveness, it was found that almost all nursing environments function in some sense of a team given that both patients and tasks are hierarchically distributed (Cohen, 1988). Psychological strain on nurses is well documented and Clegg (2000) claims that the management of and reduction of occupational psychological strain are recognized as key factors to promoting employee wellbeing and that one way to do this in nursing is to increase social connections such as through teamwork. Teamwork in nursing is not well studied but research on the impact of social support on psychological strain has been studied. Nursing literature also suggests the need to implement strategies to enhance communication and management support much like the dimension presented by Blanchard and Randolph. These dimensions have been indirectly shown to have an impact on psychological strain (Kanter, 1993).

Lawler (1983) further supports the need to develop teams, as in Blanchard’s model. The key results of a long-term study of the use and effectiveness of employee involvement practices found that teams are more popular in the United States workplace, and employee involvement leads to better business performance (Lawler, 1983). To get a sense of how active organizations have been in moving decision making to lower levels, the survey asked about the existence of a number of specific types of teams that give employees power. The trend from 1987 to 1996
showed an increase in the use of employee participation groups, and apparently, companies are adopting employee participation groups and problem-solving groups.

This study also looked at the prevalence of self-managing works teams. A comparison of the 1987 and 1990 data shows a significant increase from 28% to 47% in the use of self-managing work teams. A comparison between 1990 and 1993 shows a further significant increase from 47 to 68%, and finally, a comparison between 1993 and 1996 shows an increase from 68 to 78% (Lawler, Mohrman, & Ledford, 1992). These researchers almost equate employee involvement with self-managing teams. They completed other studies and found that the majority of companies responded to them that their employee involvement efforts are successful. They also studied relationships between teams and performance. Lundstrom, Pugliese, Bartley & Cox (2002) outlined three key dimensions as defining environmental empowerment and one was participation measures perceptions of influence in producing job outcomes and the degree to which employees feel they have input into team performance, organizational goals and processes. Another dimension that was outlined as part of environmental empowerment is responsibility, which measures the psychological investment an individual, feels toward his/her job and the commitment he/she brings to the job. This relates closely to Randolph & Blanchard (1997) dimension of team accountability.

Applicability of Environmental Empowerment to Nursing.

The health care industry in the US has been under tremendous pressure to change and reform during the past decade. The pressure to change has been driven by escalating costs, and increased demands from both dissatisfied patients and third-party payers (Chandler, 1991). The most difficult barrier to implementing empowerment in hospitals is their traditionally bureaucratic, complex and highly departmentalized structure with its ensuing culture and
leadership style. Also problematic are the unique relationship hospitals have with physicians, the conflict between hospital management philosophies and empowerment philosophies and existing quality assurance programs and union-management relationships.

Blanchard and Randolph’s (1997) theoretical components appear to be a good choice for nursing strain. Blanchard’s theory is closely related to Kanter but more useful in today’s organizations where teams have become the prominent means of work and process and where there is a need for facets that are more specifically defined but cover a broader topic. This way, a number of settings can use the categories but the strategies within each can be designed for specific context needs.

Laschinger & Spence (2001) explored the influence of environmental and psychosocial empowerment in the workplace on nurses’ perception of job strain and work satisfaction in the United States. It tested a theoretical model specifying relationship among a structural (environmental) and psychological empowerment, job strain and work satisfaction. This article was included in the literature review because it studied a nursing setting and used Spreitzer’s tool in combination with Kanters’s environmental empowerment model. Like other research so far, Kanter argued that the impact of organization social structures on employee behavior is far greater than the impact of employee personality characteristics. The social structure within organizations that Kanter believes are particularly important to the growth of empowerment include access to information, receiving support, access to resources necessary to do the job, and the opportunity to learn and grow. The article is important because Kanter’s dimensions overlap or are similar to those of Blanchard’s and yet Kanter’s construct has been used in nursing. It provides some insight into how work structures may affect nurses specifically and was used as support for the Blanchard construct.
Laschinger, Wong, McMahon, and Kaufman (1999) found that staff nurses felt more empowerment in their work setting when their leaders encouraged autonomy, facilitated participative decision-making, and expressed confidence in employee competence. Additionally, in the article they discuss several nursing studies that have linked Kanter’s conception of empowerment to job psychological strain.

They also provide information about nurses and job strain stating that job strain can have a negative effect on both patient and provider outcomes. Prolonged job strain results in professional burnout, increased sick time, tardiness, workers compensation claims, workplace conflict, violence and substance abuse (Green & Kroger, 1999; Laschinger, Spence, 2001). Karasek (1979) empirically supports that high-strain jobs have high psychological demands and low decision latitude. When workers are constrained by low control, the energy cannot be appropriately channeled into a coping response resulting in an even great physiological reaction that persists for a longer time (Laschinger & Spence, 2001). This results in fatigue, anxiety, depression and physical illness (Karasek, 1990). This is important to the present study since environmental stressors will be considered present in critical care nursing and antecedent to psychological strain and mental and physical symptoms.

The study was designed to test a model derived from Kantar’s theory linking staff nurses work empowerment to job strain and work satisfaction. It was hypothesized that structural empowerment would have a direct positive effect on psychological empowerment which, in turn, would have a direct positive effect on work satisfaction. Psychological empowerment was predicted to lead to decreased feelings of job strain that would enhance work satisfaction. Three hundred male and three hundred female nurses who worked in urban tertiary hospitals constituted the sample for this study. They use the structural empowerment work effectiveness
scale, Spreitzer’s psychological empowerment scale and a modified version of the job content questionnaire to measure strain. As predicted, structural empowerment had a direct positive effect on psychological empowerment. Psychological empowerment in turn had a strong direct negative effect on job strain. Since psychological empowerment is a response to managerial interventions to create empowering work environments, lower job strain are logical consequences with Kantar’s and Blanchard’s theory.

**The Distinction Between Psychological Empowerment and Environmental Empowerment**

A review of the literature reveals a consensus that “empowerment” has two empirically distinct levels – psychological and environmental empowerment (Spreitzer, 1997). Environmental empowerment is empowering structures, policies, and practices and the other is psychological empowerment, or individuals’ psychological reactions to these managerial practices as just described. In order to explain this distinction, it will be necessary to provide the overall history of how the empowerment constructs were developed (Spreitzer, 1997).

Two distinct levels of empowerment were originally identified and defined as relational (environmental empowerment) and motivational (psychological empowerment) (Spreitzer, 1997). The focus of the relational approach was to identify the employee perceptions of their individual power to cope with the events, situations, and people they encounter at work (Laschinger & Wong, 1999). The motivational approach puts less emphasis on delegation of power, advocating for open communication, inspirational goal setting, and giving encouragement and feedback (Conger & Kanungo, 1988; Thomas & Velthouse, 1990).

Research on organizational climate, a construct closely related to environmental empowerment, has shown psychological climate to be distinct from organizational climate (Tucker, 1997) in that the latter represents a shared or summary perceptions that people attach to
organizational practices and characteristics of the work setting. Psychological climate reflects judgments by the individual about the degree to which the work environment is beneficial to his or her sense of well-being while organizational climate is based on individual perceptions of the organizational features, events, and processes.

There have been a number of studies on the distinction between the two levels of empowerment that psychological empowerment is directly influenced by the work context, (environmental empowerment as it was later defined) (Conger & Kanungo, 1998; Spreitzer, 1996; Lawler, Mohrman & Ledford, 1992; Spreitzer, 1997; Lawler, Mohrman & Ledford, 1992; Spreitzer, 1997; Randolph, 1995). Evidence indicates that supportive climate enhances employee involvement in decision-making supportive work relationships are positively related to empowerment, change-oriented and supportive leadership is positively associated with empowerment, participative work climate is significant predictor of empowerment and feedback is a significant predictor of the psychological state of meaningfulness. Research by Spreitzer (1997) suggests that role ambiguity is a key contextual factor associated with empowerment perceptions by middle managers. Taken together, these studies provide additional support that psychological empowerment it distinct from and an antecedent to environmental empowerment.

In summary, while some would argue that the differences between psychological empowerment and environmental empowerment are simply different factors of the same construct, a review of the literature reveals a consensus that “empowerment” has two empirically distinct levels – psychological and environmental empowerment (Spreitzer, 1997). Two distinct levels of empowerment were originally identified and defined as relational (environmental empowerment) and motivational (psychological empowerment) (Harding, Munro & Rodwell, 1998; Spreitzer, 1997). There have been a number of studies on the distinction between the two
levels of empowerment that psychological empowerment is directly influenced by the work context, (environmental empowerment as it was later defined) (Conger & Kanungo, 1998; Spreitzer, 1996; Spreitzer, 1997; Randolph, 1995).

Randolph & Blanchard have studied empowerment by first testing that the two levels are distinct and by studying their proposed three levels of empowerment; information sharing, autonomy, and clear structures and the extensive use of teams. The models presented by Rosabeth Moss Kanter (1990) and Randolph & Blanchard both argued and empirically tested the distinction between the two levels of empowerment.

Spreitzer (1997) argues that most practitioners advocate the mechanistic approach to empowerment and support the dimensions presented by Randolph & Blanchard (1997) however, she also says that it is important to remember that looking at one alone is incomplete. Her research suggests a more complex view, namely, that empowerment must be defined in terms of fundamental beliefs and personal orientations (psychological empowerment) as a distinct concept from environmental empowerment. Spreitzer points out that the challenge thus becomes how to facilitate both perspectives simultaneously. Taken together, these studies provide additional support that psychological empowerment it distinct from and an antecedent to environmental empowerment.

**Section 2 Independent Variable Psychological Empowerment**

This section will provide information about the construct of psychological empowerment including related theories and literature that supports each of this constructs dimensions. More specifically, related theories in the development of the psychological empowerment construct will be presented as well as information regarding current psychological empowerment developments and research. The final sections include literature to support the conceptual
framework for psychological empowerment and each of the dimensions of meaning, competence, self-determination and impact.

**Related Theories in the Development of the Construct Psychological Empowerment**

Psychological empowerment has its roots in the work of Thomas and Velthouse in 1990 (Spreitzer, 1995). The basis for psychological empowerment was ultimately, formed by Bandura’s (1977) construct of self-efficacy. Bandura (1977) developed the social cognitive theory (SCT) that offered several major advances for the field of psychology and organizational behavior. The theory proposes that learning is a knowledge acquisition through cognitive processing of information. Even in this early work on the construct, Bandura recognized two levels. The social part acknowledges the social origins of much of human thought and action (what individuals learn by being part of a society), whereas the cognitive portion recognized the influential contribution of thought processes to human motivation, attitudes and action. It is from this theory that Bandura and others advanced the concept of self-efficacy.

Later, Conger and Kanungo (1988) began to study psychological empowerment and based their model on that of Bandura where empowerment refers to a process that increases workers effort performance expectancies and an individual’s belief in his or her self-efficacy is enhanced. They made a distinction between empowering interventions and the sense of being empowered. Conger & Kanungo (2001) assert that empowering interventions enable workers to feel they can perform their work competently increases both initiation and persistence of subordinate’s task behavior.

In the psychology literature, power and control were also related to the self-efficacy construct and used as the motivational and/or expectancy belief-state that are internal to
individuals. Power in this motivational sense refers to an intrinsic need for self-determination (Luthans & Stajkovic, 2001) or a belief in personal self-efficacy (Bandura, 1977).

Similarly, the management and social influences literature suggested that power was primarily a relational concept used to describe the perceived power or control that an individual actor or organization has over others (Kleiner, Roberts, Ross, Senge & Smith, 1994). This literature interprets power as a function of the dependence and/or interdependence of actions. Therefore, to empower from the relational perspective implies the granting of power and a delegation of authority.

In the classic theoretical work on psychological empowerment, Thomas and Velthouse (1990) conceptualized empowerment as the gestalt of four cognitions: a sense of meaning, competence, self-determination, and impact. Meaning, or purpose, involves a fit between the needs of one’s work role and one’s values, beliefs and behavior. They reference Brief & Nord, (1990).

Competence, or self-efficacy, is a belief that one possesses the skills and abilities necessary to perform a job or task well and is analogous to agency beliefs, personal mastery or effort-performance expectancy (Bandura, 1977). Competence is one of the four dimensions of Spreitzer’s empowerment tool and is found to be a psychological necessity for employees in intense environments (Yeh-Yun Lin, 1998).

Self-determination is the belief that one has autonomy or control over how one does his or her own work and is consistent with notions of personal control. Kraimer, Seibert & Liden (1999) examined Spreitzer’s Psychological Empowerment scale in a nursing setting and found that self-determination was a precursor of impact.
Impact is the perception that one has influenced strategic administrative outcomes at work to make a difference. Impact is different from self-determination, which refers to an individual’s sense of control over his or her own work. Impact refers to individual’s sense of control over organizational outcomes. Where self-determination implies job involvement, impact implies organization involvement (Sprietzer, 1995). Together, these four dimensions reflect a proactive, rather than passive, orientation to one’s work role (Sprietzer, 1995).

**Conceptual Framework for Psychological Empowerment**

This section will first provide the conceptual framework for the construct psychological empowerment. Spreitzer (1995) developed a psychological empowerment construct by empirically testing the model developed by Thomas and Velthouse in 1990. Her research has led to a well-accepted definition of psychological empowerment. Psychological empowerment has been defined as an individual’s experience of intrinsic motivation that is based on cognitions about him or herself in relation to his other work roles (Spreitzer, 1995). From her research, she defines environmental and psychological empowerment to be empirically distinct.

In a critique of research regarding job characteristics and the influence on workers, Conger & Kanungo (2001) had identified the need for alternative theoretical perspectives that distinguish between situational attributes and incumbent cognitions about those attributes. Even to date, the majority of research on empowerment has focused on the individual job incumbent’s psychological experience of empowerment and how it links with various work-related outcomes. Perhaps this is because it is the individual employee’s perceptions and evaluations of the work environment, rather than the actual environment, that mediates attitudinal and behavioral responses (Brink, Bengtsson & Olofsson, 2003).
It is not that external factors leading to psychological empowerment or self-efficacy was ignored. Conger (1986) had recognized external and workplace conditions that lowered self-efficacy such as during major reorganizations, when start-up ventures had begun and in firms that had authoritarian managers with overly demanding organizational goals. Kanter (1977, 1983) argued that organizations with strong organizational communication systems, network-forming arrangements, access to resources, and effective job designs could contribute to psychological empowerment.

According to job characteristics theory, core job characteristics lead to three critical psychological states: experience meaningfulness, experienced responsibility and knowledge of results. Each of these psychological stages was described as similar to cognitive task assessments that define empowerment (Thomas & Velthouse, 1990). Thomas and Velthouse’s arguments are that psychological climate is an individual rather than an organizational attribute, assessed in terms of perceptions that are meaningful to the individual instead of description of the environment.

**Current Psychological Empowerment Developments and Research**

This subsection serves to introduce recent and relevant empowerment developments and research. Spreitzer (1995) examined the validity of this conceptualization of psychological empowerment by using second order confirmatory factor analyses conducted with two complementary samples to demonstrate the convergent and discriminate validity of the four dimensions of empowerment. Exploratory factor analysis helped her to identify the number and nature of latent factors that are believed to exert causal influence on the observed variables they are studying. The primary sample consisted of 393 managers randomly selected from various work units representing all functions, divisions, and geographic locations of the industrial
company. Questionnaires were administered at the beginning of a managerial development program designed to address issues of leadership development, cross-functional integration, and total quality management. The second sample was lower level employees from an insurance company.

The second-order confirmatory factor analysis supported the view of psychological empowerment as a single overall construct composed of four distinct sub-dimensions. Spreitzer used the following criteria to assess the fit of each section. First, the adjusted goodness of fit index (AGFI) that is “independent of sample size and relatively robust against departures from normality” (Joreskog and Sorbom, cited in Bagozzi and Yi 1988: 79) should meet or exceed the 0.9 rules. Second, the root-mean-square residual (RMSR), an estimate of the average magnitude of the fitted residuals, should be less than .05. Finally, the noncentralized normed fit index (Thompson, 2000), which compares the hypothesized model to a null model, should meet or exceed a 0.9 threshold. In the industrial sample, an excellent fit was obtained (AGFI= .93, RMSR=. 04, NCNFI=. 97). A modest fit was obtained for the insurance sample (AGFI=. 87, RMSR=. 07, NCNFI=. 98). Each of the items loaded strongly on the appropriate factor, and the four factors were significantly correlated with each other in both samples. Validity estimates for the dimensions are typically around .80. The analysis found no cross-loadings among items. Structural equations modeling was also used to examine a homological network of psychological empowerment and each of the items loaded strongly on the appropriate factor in the confirmatory analysis section (Spreitzer, 1995). It is considered a gold standard in the field.

A study of nursing professionals provided further evidence for the construct validity of scores as well and in a nursing environment specifically. Spreitzer (1995) used a modified four-factor structure, which was replicated with data collected one year later. In both analyses the
four dimensions of empowerment converged on a single higher order factor, indicating both
discriminate validity among the four empowerment dimensions and convergent validity in a
single, higher order factor (Spreitzer, 1995). This four-factor model was found to fit better than a
one-factor model in both analyses, providing further evidence for the discriminate validity of the
four empowerment dimensions in the sample. In addition, she related the four empowerment
dimensions to a set of conceptual related variables, provided further evidence for the convergent
and discriminate validity of scores on the scale. The strong evidence for good validity implies
likelihood that reliability must also be acceptable.

Kraimer, Seibert & Liden (1999) assessed the convergent, discriminate, and construct
validity of scores on Spreitzer’s Psychological Empowerment Scale in nursing. Confirmatory
factor analysis of data from a sample of 160 nurses showed substantial support for Spreitzer’s
four empowerment dimensions: meaning, competence, self-determination, and impact.

While Spreitzer’s original assessment of the four dimensions of empowerment was
studied on managers, this study was conducted on staff nurses. A field study was conducted at a
community hospital. The nurses ranged in age from 19-65 years with an average age of 37.7
years; 35% had an associate’s degree in nursing, 27% had a 3-year nursing diploma, and 37%
had a B.S.N.; 34% were Asian, 61% were Caucasian, and the remainder were either Hispanic or
African American. Most of the respondents were female (90%). Their average number of years
with the hospital was 7.6. To examine Spreitzer’s (1995) hypothesized four-dimensional factor
structure; two second-order CFA’s (one with Time 1 sample data and one with Time 2 sample
data) were conducted using LISREL 8. A modest fit was obtained for the hypothesized factor
structure at Time 1 (X2=154.79, df=50, p<.001; CFI=. 90; AGFI=. 81; RMSR=. 10) The
parameter estimates and fit statistics reported for the modified CFA suggest that the scale items
adequately identify with their respective dimension. In addition, results from structural equation modeling demonstrated job characteristics to relate differentially to the empowerment dimensions, providing evidence for both convergent and discriminate validity of scores on the four-empowerment dimensions. Because this information is so important in presenting the validity of the instrument, more details on this article are included in the instruments section.

Spreitzer (2004) presented research on the consequences of psychological empowerment in literature, which is important to the present study. When employees feel empowered, they have more positive attitudes in terms of work/job satisfaction (Spreitzer, Kisilos & Nason, 1997) and organization commitment (Krainer, Siebert & Liden, 1999). Sparrow & Gaston (1998) found that when lower level hospitality employees felt empowered, they had more satisfaction, and fewer turnovers. Empowered employees also reported less job stress (Spreitzer, 1997). It also positively affects performance, managerial effectiveness, employee effectiveness (Spreitzer 1997), employee productivity (Koberg, 1999), and work unit performance (Seibert, Silver, & Randolph, 2004).

The article offered a literature review that follows the history of empowerment to this date. Two distinct theories of empowerment were originally identified, the relational (environmental) and the motivational (psychological). The focus of the environmental approach was to identify the employees perceptions of their individual power to cope with the events, situations, and people they encounter at work. The motivational approach puts less emphasis on delegation of power, instead advocates open communication, inspirational goal setting and give encouragement and feedback (Conger & Kanungo, 1988; Thomas & Velthouse, 1995);

Spreitzer (1997) also reviewed the work of Conger and Kanungo (1988), Thomas and Velthouse (1990) and the development of a model of empowerment in which they proposed four
psychological cognitions. She summarizes the research as having assessed an array of psychological climate dimensions including: work structure, role clarity, supportive management, teamwork, decision centralization and leader goal facilitation.

She researched the dimensions further to find that they have been typically identified in the literature. She discussed evidence that indicates that supportive climate enhances employee involvement in decision-making supportive work relationships are positively related to empowerment change-oriented and supportive leadership is positively associated with empowerment participative work climate is a significant predictor of empowerment and feedback is a significant predictor of the psychological state of meaningfulness.

The practical implications in the article are perhaps the most important of all that the study offers. Based on her research, Spreitzer (1995) encourages managers to ensure that employees have a clear understanding of the scope of their job and responsibilities, articulate the overlap between organizational goals and individual goals, demonstrate support for employees and encourage participative decision-making. Managers should have access to training in appropriate behaviors, such as participative decision-making and supportive leader’s behavior.

Spreitzer, Kizilos & Nason (1997) make reference to the environmental empowerment scale as being a good complement to use with Spreitzer’s in the present study and therefore suggests a compatibility of the two levels of empowerment being measured as they are in this study. She argues that most practitioners advocate the mechanistic approach to empowerment and support the dimensions presented by Randolph and Blanchard. However, she also says that it is important to remember that looking at one alone is incomplete. Her research suggests a more complex view, namely, that empowerment must be defined in terms of fundamental beliefs and personal orientations (psychological empowerment). Spreitzer points out that the challenge thus
becomes how to facilitate both perspectives simultaneously, which fully support the model used for this study. The researchers provided an extensive literature review on the relationships between each level of psychological empowerment on strain. Instead of including that research here, that literature is presented in the four subsections that represent each dimension in sections to follow.

Finally, and perhaps most important, is the link she makes between her four dimensions and managerial effectiveness. Psy and mgrs effectivenessIn previous research, each of the individual dimensions of empowerment has been found to be related to behaviors conducive to managerial effectiveness (Spreitzer, 1997). Meaning results in high commitment and concentration of energy (Kanter, 1983). Competence results in effort and persistence in challenging situations coping and high goal expectations (Ozer & Bandura, 1990), and high performance. Self-determination results in learning, interest in activity, and resilience in the face of adversity. Impact is associated with an absence of withdrawal from difficult situations and high performance.

**Literature supporting the dimension Competence.**

Yayli, Yaman & Yaman, (2003) presented the link between the importance of competence for critical care nurses and ability to manage psychological strain. Competence is one of the four dimensions of Spreitzer’s empowerment tool and is found to be a psychological necessity for critical care nurses. Nurses working in critical care environments are exposed unrelentingly to human suffering, death and family crises. Together with the organizational constraints inherent in the hospital system, these nurses may also be faced with an increasing amount of work-related stress and negative mental and physical health effects. These stressful experiences are believed to affect nurses’ physical health, emotional stability and sense of
adequacy. This in turn will adversely affect the working relationship with their colleagues and if left unattended, the results could jeopardize the quality of patient care.

Spreitzer, Kizilos, & Nason, (1997) also presented literature that show relationships between competence and strain. They suggest that those individuals who feel more competent about their abilities are less likely to feel significant strain on the job. Gecas (1989) reported that self-efficacy is a significant factor affecting individual functioning and physical and psychological health.

_Literature supporting the dimension Meaning._

Siegall & Gardner (2000) speak to how meaning, one of Spreitzer’s empowerment dimensions is important to critical care nurses. This paper describes how 12 staff members in an intensive care unit of a middle-sized Swedish hospital viewed their jobs and tasks. Open-ended questions were asked and the interviews were analyzed using thematic technique. The participants thought of intensive care as turbulent and ambiguous, and that managing the health status of the patient, seeking to appreciate the patient’s needs and ensuring that the staff worked harmoniously and effectively as a team defined meaning. Organizational downsizing has generally been shown to cause a plethora of organizational problems with negative effects on the health of the employees being most dominant.

This article argues that the way nurses believe in their practice impacts how they practice. Another aim of this study was to describe how the staff of an ICU understood their work in times of major restructuring because of downsizing. A qualitative exploratory study design was used using semi-structured interviews as the method of data collection in 1999. This study concludes that a quality system ought to support a process of reflection on the disparate
meanings about the future and transforming these into collective meanings leading to effective actions.

Spreitzer, Kizilos, & Nason (1997) presented literature that showed relationships between meaning and strain. The relationship between a sense of meaning and strain is equivocal. While unchallenging, monotonous work without meaning can be stressful high job demands combined with low decision latitude can also be stressful (Karasek, 1979). More specifically, individuals who see their jobs as personally meaningful are likely to be more personally invested in their work, resulting in more potential for strain on the job, particularly when things do not go as planned. On the other hand, individuals who do not find their work meaningful are less likely to be personally invested in their work and are apt to be less strained when things do not go as planned. Thus, the literature suggests that the meaning dimension of empowerment may have both positive and negative effects on job related strain.

*Literature supporting the dimension Self-determination.*

Kraimer, Seibert & Liden (1999) studied Spreitzer’s Psychological Empowerment scale in a nursing setting and found that self-determination was a precursor of impact. This study is relevant for two reasons; it is one of only three studies where this scale was used in nursing and because it is one of very few studies that examine self-determination. The purpose of the present study was to further Spreitzer’s work by assessing the convergent, discriminate, and criterion-related validity of scores on Spreitzer’s multidimensional scale. The researchers completed a confirmatory factor analysis of data from a sample of 160 nurses that showed substantial support for Spreitzer’s four empowerment dimensions. The findings were compared with data from a subset of the same sample 1 year later.
The study also found that the four empowerment dimensions differentially related to organizational commitment and career intentions, providing evidence for the predictive validity of the Empowerment scale scores. One hundred and eighty three nurses completed the survey, a 71% response rate of all nursing personnel employed at the hospital. Spreitzer’s (1995) 12 item Empowerment scale was used to measure the four dimensions of empowerment. Job Diagnostic Survey (1975) was used to assess the three job characteristics. This study of nursing professionals provided evidence for the construct validity of scores on Spreitzer (1995) Psychological Empowerment scale for nurses.

**Literature supporting the dimension Impact**

Finally, impact reflects whether individuals feel as though they are making a difference in their organization. Employees will not feel empowered without a sense of progression toward a goal or a belief that their actions are influencing the system (Thomas & Velthouse, 1990). Impact is the degree to which an individual can influence strategic, administrative, or operating outcomes at work (Spreitzer, 1997). Impact is the converse of learned helplessness. Kanungo (1987) discussed the effects of universal learned helplessness, or the lack of an opportunity to have an impact. In experimental work, they found that universal learned helplessness resulted in dampened ability to recognize opportunities, reduced motivation, and depressed affect. Gardner & Seigall (2000) report from a review of previous research that universal learned helplessness was related to depression, anxiety, frustration and hostility and found that impact was strongly related to enhanced work satisfaction and reduced strain, but not related to work performance. As such, while research evidence is sparse, and expected that the impact dimension of empowerment would be related to work satisfaction and reduced strain.

**Section 3 Dependent Variable Psychological Strain**
This section will provide information about the construct of psychological strain. Related theories in the development of the psychological strain construct are presented first. The next section provides information regarding current strain developments and research.

**Related Theories in the Development of the Psychological Strain Construct**

There are at least four broad fields of specialization; psychology, organizational psychology, medicine, and engineering psychology. These four approaches have fundamental differences regarding the nature of what is acceptable as evidence of the existence of a stressful situation. Organizational psychology focuses on psychological stressors in the workplace and on psychological strains.

The present study turns to organizational psychology for defining strain and focuses on the impact of stressors on psychological symptoms. Lazarus (1966) general model of psychological stress and coping conceptualized stress as a process that involves a complex transaction between a person and his or her environment (Lazarus 1984). The term psychological strain defined as a situation in which some characteristics of the work situation are thought to cause problematic psychological symptoms or to cause risk factors making poor health more likely (Burke, 1986)

There are a number of organizational development and psychological strain models that have led to measurement tools such as the person-environment fit model, which defines stress according to organizational demands, job duties, and requirements, job pressures, employee skills and abilities, job satisfaction, and individual differences in attitudes, personality traits and health status.

The psychological strain at work model added to the person-environment fit and included more specific categories of occupational strain. Karasek’s (1990) Demand-Control
model focuses on interactions between the objective demands of the work environment and the
decision latitude of employees in meeting these demands (Karasek, 1990). The PE-Fit, Stress at
Work and Demand-Control models of occupational stress focus on the interactions of job
pressures with the skills, abilities, and decision latitude of workers.

Examples of strain symptoms include anxiety, tension (Beehr, 1995), depression
psychological fatigue, and burnout. In fact, it is this distinction between perceived psychological
stress and experienced strain that is the underlying model for the Occupational Psychological
strain Inventory used in the present study.

This model helped to develop a reliable and valid measure, the Occupational Stress
Inventory (OSI) which was developed by Osipow (2003) and his colleagues. In previous models,
and in others like them, occupational stressors are seen as having substantial consequences for
the individual (strain) that can affect work performance such as unwillingness to assume
responsibility, lack of job involvement, lack of concern for other colleagues and the organization,
absenteeism, accident proneness, and other counterproductive behaviors. This distinction
between perceived stress and experienced strain was seen as critical to any successful model of
occupational stress and formed part of the underlying model for the OSI.

An initial review of the occupational strain literature offered in the OSI-R manual by
Osipow suggested that there is no shortage of models to explain how individuals are subjected to
stress in work settings. For example, French and Bell (1999) viewed work stress and the
resulting strain in terms of the interaction between the individual and the environment. French
postulated a subjective environment based on an individual’s perceptions of events and an
objective environment that could be measured directly. According to this model, work stressors
occur primarily because of poor person-environment fit and these stresses are major producers of
psychological and physiological strain. Thus, French defined occupational stress as those job characteristics that pose a threat to the individual. He defined occupational strain as a deviation from a normal response that an individual would experience in a given situation.

Based on literature, coping skills were considered critical in the definition of dimensions for any model of occupational stress and occupational mental health (Clegg, 2001). As a result, the initial development of the OSI focused on the construction of measures of three separate but related domains; occupational stress, occupationally induced strain, and coping resources available to counter the effects (strain) of occupational stress. These three domains were identified as being critical to the model. The second step was to define the facets underlying them as the basis for constructing scales. This was done, again, with reference to the literature and in consultation with knowledgeable colleagues.

The OSI-R literature continues with information about the history of strain scales and found that most of the instruments available to measure stress in the workplace have ignored the work context dimensions (Osipow, 2003). Studies of occupational stress have examined those stresses inherent in certain occupations without given substantial recognition to the stress involved in specific job roles that cut across other occupational fields and levels. The social psychology of work suggests that a worker in any occupation can potentially occupy a variety of social roles, each of which has the potential to be stressful in some particular way. Each of these roles can be positive or negative.

The strain resulting from occupational stress manifests itself in many different areas and is not restricted to vocational behaviors. Psychological strain is reflected in affective and subjective responses of various types. Examples include anxiety, depression, lethargy, sleep and eating disorders. Interpersonal and behavioral strains involve behaviors that include withdrawal,
isolation, anger, and irritability toward others. Finally, vocational strain is seen in the area of work productivity, attendance, and satisfaction. It has been postulated that strain will be classified into four major categories; psychological, physical, interpersonal and vocational.

They conclude in the manual that these concepts are well represented in the literature related to occupational strain. This literature describes the behavioral symptoms of strain that in many ways resemble those for the PSQ subscales and their underlying concepts.

Using the OSI along with several other instruments, Derogatis (2001) studied perceived workplace climate looking especially at the relationship between occupational stress, coping and work satisfaction. They found that workplace climate influenced occupational stress and coping. Occupational stress and coping were found to affect work satisfaction.

**Current Strain Developments and Research**

According to Osipow, the OSI-R could be used to identify the sources of stress and symptoms of strain prevalent in a variety of workplace settings. This information might be used simply for descriptive purposes or for consideration in the design, organization, and/or management of occupational environments. Although it may not be possible to alter the nature of some environments, just being able to identify the stressful components in an occupation may be useful to its members. A growing body of research shows the relationship between the OSI-R scales and work-related conditions, activities and behaviors. Studies have examined the role of occupational stress on nonproductive behavior (Van Wagoner, 1985), absenteeism (Higgins, 1985), physical symptoms (Gallagher, 1983), job satisfaction (Baldwin, 1981; Kleinber, 1983; Missbach, 1984) and burnout (Higgins, 1985). These references are not in the bibliography of the present study but were presented in the OSI manual and are simply listed here for reader
reference. In light of these theoretical constructs and empirical findings, it is important to study strain as a measure of physical and emotional symptoms.

Other related strain models and surveys are available although are less appropriate to the purpose of the present study. Another related survey is the Personality Assessment Screener that was designed to identify individuals in need of further assessment for emotional problems, behavioral problems, or both. The scale measured similar strain symptoms but focused primarily on more severe mental health symptoms such as psychosis and clinical depression. The global job strain was measured with the Strain In General scale (Smith, 1992) that had 18 global evaluative items that assess general perceptions of strain at work. Other scales assessed physical symptoms that have occurred fairly often within the past 12 months which are good indicators of strain and strain but offer limited results (Chandler, 1991) The Coping scale assesses the internal resources people possess that relate to their capacity to handle strain. The authors defined coping resources as the precursors of behavior from coping strategies defined as how people react to stressors.

The Stress Profile is a 123-item instrument designed to measure two areas of health and strain risk: those circumstances that help a person withstand the effects of strain and those that make an individual vulnerable to strain. Essentially, it measures a person’s coping resources. The author reported no significant differences in scores across the Strain Profile for different gender, ethnic, and age groups or educational level.

The multi-dimensional Health Profile by Neumann (1998) is intended as a screening to assess psychological factors relevant to mental and physical health. The MHP was designed to provide a comprehensive screening battery that would be feasible for physicians to use with patients in primary health care setting. The Brief Symptom Inventory (BSI) (Deragotis, 2001)
was designed for use with a broad spectrum of adult medical patients 18 or older and adult individuals. It was recommended for use by health and behavioral health professionals as a psychological screen, to support clinical decisions, for monitoring treatment progress, and to assess treatment outcomes. This scale was strongly considered for the present study and raised the question of how strain is distinguished from depression or mental health. The BSI measures all the symptoms related to mental health disorders. Many of these symptoms are similar to ones that would be included in strain however, there are fewer symptoms used to measure strain and are based on the most common symptoms experienced by people in high stress jobs. Therefore, this scale would provide information about levels of depression and anxiety and a host of mental problems but not on the specific symptoms related to workplace stressors.

**Conceptual Framework for Psychological Strain.**

The OSI was also chosen because it clearly delineates the symptoms of strain while most strain scales are actually examining the “stressors” that are in the work environment. Most strain researchers find that depression, anxiety and psychological distress was elevated in individuals working in high strain jobs. Examples of clinical symptoms include anxiety, depression, and lethargy. Interpersonal and behavioral strain symptoms include withdrawal, isolation, anger, and irritability. Therefore, it makes sense to use these symptoms as indicators of high strain in a nursing setting.

The Occupational Stress Inventory was designed to measure Psychological Strain in the workplace and was developed to design generic measures of occupational stressors that would apply across different occupational levels and environments. It was also developed to provide measures of psychological strain experienced by individuals because of work stressors. This construct is particularly well suited for this study because it measures strain as clinical symptoms
that research has shown to be associated with poor performance in critical care nursing (Hass, 2005).

In summary, because the present study was ultimately concerned with the performance of critical care nurses who are under strain, it was necessary to have a scale that measure symptoms found to be most frequently associated with poor performance. Osipow’s psychological strain construct was the best fit because it had sources of strain and the symptoms clearly delineated. Other stress and strain scales such as Derogatis (2001) were older, not well studied, and examined the stressors in the environment rather than the symptoms (strain). Since I wanted to measure the symptoms of strain, this construct satisfied the specific purpose of the present study.
Section 4 The Critical Care Nursing Context

Most research on demographics for critical care nursing suggests that there are few if any, major differences in the way empowerment is perceived across a number of demographics presented in this next section (Kraimer, Seibert & Liden, 1999). Demographics are presented to provide an overall picture of present critical care nursing today and to be able to compare the sample used in the present study with the national demographics. This comparison is presented in the results section.

The Registered Nursing Population

Statistics about age, gender, part-time or full-time status, number of years on the same critical care nursing unit, position (management or not), critical care specialty, education and total number of years working in critical care nursing environments will be provided in order to allow for appropriate inferences to be made to similar nursing populations. The following information provides recent statistics on primary demographics of the nursing population.

The Health Resources and Service Administration, Bureau of Health Professions, National Center for Health Workforce Analysis (National Center) is the primary Federal agency responsible for providing information and analysis relating to the supply and demand for health professionals. In support of this role, the National Center has recently assumed responsibility from the Bureau’s Division of Nursing for conducting the quadrennial National Sample Survey of Registered Nurses and developing supply and demand projection for registered nurses.

The National Sample Survey of Registered Nurses (NSSRN) is the nation’s most extensive and comprehensive source of statistics on those with current licenses to practice in the United States whether or not they are employed in nursing. It provides information on the
estimated number of registered nurses (RNs), their educational background and specialty areas, employment status including type of employment setting, position level, salaries, geographic distribution, and personal characteristics including general, racial/ethnic background, age and family status.

The development of a design for collecting data through sample surveys of RNs was initiated in July 1975 under a contract with Westal, Inc. Subsequently, the Division of Nursing, Bureau of Health Professions, Health Resources and Services Administration, (DHHS) conducted seven sample surveys. Reports for six studies, those conducted in September 1977, November 1980 and 1984, and March 1988, 1992, and 1996 and have been published and available to those involved in health care planning and evaluation as well as to the public. This report provides preliminary findings from the seventh survey. The complete report was released in the spring of 2001.

As of March 2000, the total number of licensed registered nurses (RNs) in the United States was estimated to be 2,696,540, an increase of 137,666 over 2,558,874 licensed RNs reported in 1996. Although this was a 5.4 percent increase in the total RN population, it was the lowest increase reported in the previous national surveys. By comparison, the highest increase in the RN population was experienced between 1992 and 1996 when the total number of RNs increased by an estimated 14.2 percent (or 319,058 from 2,239,816 to 2,558,874).

**Educational preparation.**

During the past 20 years, there has been a shift in graduations from basic nursing education programs away from diploma programs to either associate degree or baccalaureate programs. In 1980, 63 percent of licensed RNs (about 1 million of the estimated 1.6 million in 1980) had received their basic nursing education in diploma programs. In 2000, this fell to 29.6
percent (about 8000,000 of the estimated 2.7 million licensed RNs). Corresponding figures for
RNs who reported completing an associate degree program increased from 19 percent (about
308,000) in 1980 to 40.3 percent (about 1.1 million in 2000) program increased from 19 percent
(about 308,000) in 1980 to 40.4 percent (about 1.1 million in 2000). For RNs who reported
completing their initial preparation in a baccalaureate degree program, the figures increased from
17.3 percent (about 288,000) in 1980 to 29.3 percent (about 792,000) in 2000. In March 2000 the
distribution of the RN population according to the highest nursing education level, which
incorporates any post RN degree received, revealed that 22.3 percent (about 275,000) reported
having a masters or doctoral degree.

Critical care nurses are required to practice as a registered nurse for 1,750 hours in direct
bedside care of critically ill patients during the previous two years, with 875 of those accrued in
the most recent year preceding application. Clinical practice hours for CCRN examination or
renewal eligibility must take place in a US based facility or in a facility determined to be
comparable by verifiable evidence to the US standard of acute and critical care nursing practice

Nurses serving as managers, educators (in-service or academic), or preceptors may apply
their hours spent supervising nursing students or nurses at the bedside. Nurses in these roles must
be actively involved in caring for patients at the bedside

The other certification exam for CNS’s is the CCNS exam. This exam has much more
specific eligibility. Nurses must meet the following requirements: 500 hours in direct clinical
practice within the master’s program (until July 2006 hours may also be earned as a transcript
clinical practicum). Candidates must obtain official final copies of all graduate level educational
transcripts submitted with the CCNS exam application. Evidence of expertise in clinical
knowledge, skills and judgment, as demonstrated by one of the following: basic or advanced
certification in nursing, publication demonstrating expert knowledge in an identified clinical field, presentation at a local, regional or national conference on a clinical nursing topic in a field of expertise.

_Turnover rates._

Annualized turnover rates are highest among Certified Nursing Assistants (78.1%) followed by staff Registered Nurse’s (56.2%) and LPN’s (53.6%).

_Position (Manager vs. Non-manager)._  
Laschinger (2002) did a literature review and found that overall empowerment scores for critical care nurses were similar to scores reported by management positions, such as charge nurses (Thomas & Velthouse, 1990); first-line managers (Laschinger & Spence, 2001), and middle managers and only lower than those reported by nursing directors (Thomas & Velthouse, 1990). One study did find a marginal difference between critical care nurses level of strain and staff nurses. Staff nurses had higher levels of job strain than critical care nurses did (Almost, 2002). Most research suggests that level of position does not suggest that there will be differences in perceptions of empowerment.

_Part-time or full-time status._  
Of the total licensed RN population in March 2000, an estimated 58.5 percent of RNs reported working full-time, 23.2 percent reported working part-time, and 18.3 percent reported not being employed in nursing.

_Age._  
The average age for RNs has climbed steadily in recent years resulting in greater proportions of nurses in the older age brackets who are approaching retirement age. Three factors contribute to this aging of the RN workforce, the decline in number of nursing school graduates,
the higher average age of recent graduation classes, and the aging of the existing pool of licensed nurses. Graduates of associates degree programs, the largest source of new RNs under the age of 30. Between 1950 and 2000, that proportion declined from 25 percent to 9 percent. This slowing of new, young entrants coupled with an accelerating retirement rate for older RNs will produce a national supply of nurses that in 2020 will not only be older but no larger than the supply projected for 2005.

The number of new licenses in nursing is projected to be 17 percent lower in 2020 than in 2002, while the loss from the RN license pool due to death and retirement is projected to be 128 percent higher. In addition to the slower rate at which RNs were added to the workforce in the last half of the 1990’s, they now appear to be leaving the RN license pool, through death or retirement at a faster rate than ever. Additionally, the changing demographic nature of the population is a critical factor affecting demand for RNs. Recent projections show the nation’s population will grow 18 percent between 2000 and 2020, resulting in an additional 50 million people who will require health care. Much of this population growth can be attributed to advance in science and medicine that have increase life expectancy and resulted in a higher proportion of the population being over the age of 65, a significant source of demand for RNs.

The average age of the RN, population in March 2000 was estimated to be 45.2 years; nearly one year older than in 1996 when than average age was 44.5. The average age of RNs working in nursing increased from 42.3 years in 1996 to 43.3 in 2000.

In 1980, 52.9 percent of all RNs were estimated to be under the age of 40, compared to 2000 when only 31.7 percent reported being under the age of 40. The most significant drop in numbers was seen among those RNs under the age of 36. In 1980, 30.5 percent of RNs were
under the age of 36, compared to 18.3 percent in 2000. The RN population under 30 dropped from an estimated 25.1 percent in 1980 to only 9.1 percent in 2000.

**Numbers of RN’s with additional nursing education preparation.**

About 18.6 percent of the RN population in 2000 had completed additional academic nursing or nursing related preparation after they graduated from basic nursing education. An estimated 15.5 percent of those initially prepared in associate degree programs and 23.6 percent of those prepared in diploma programs had obtained post-RN nursing or nursing related degrees. In most instance, the highest level achieved was a baccalaureate degree.

**Numbers of advance practice nurses.**

Advanced practice nurses include clinical nurse specialists, nurse anesthetist, nurse midwives and nurse practitioners. In March 2000, the number of RNs prepared to practice in at least one advanced practice role was estimated to be 196,279 or 7.3 percent of the total RN population, compared to an estimated 161,712, or 6.3 percent in 1996. The largest group among the advanced practice nurses included the nurse practitioner, followed by the clinical nurse specialists. These two groups together, including those with dual training as a nurse practitioner and clinical nurse specialists made up approximately 80 percent of all advanced practice nurses.

**Numbers of nurse practitioners.**

Nurse practitioners (NPs) included all RNs prepared beyond basic nursing education in a NP program of at least three months. In March 2000, there were an estimated 88,186 NPs, an increase of 23,995 NPs from 1996. About 62 percent of NPs had completed a master degree program, 6.5 percent had attended post-RN certificate programs. An estimated 89 percent of NPs were employed in nursing, although not necessarily with the position title of nurse practitioner. In 1999, licensed practical nurses (LPN) composed 23 percent of the nurse workforce. LPNs
provide patient care under the direction of physicians and registered nurses, with 32 percent working in hospitals, 28 percent working in nursing homes, and the rest working for doctors’ offices, home health agencies, residential care facilities, schools, temporary help agencies, and government agencies.

**Numbers of clinical nurse specialists.**

Clinical nurse specialist included those RNs who had formal clinical preparation resulting in a master’s degree. The number of CNSs increased for 53,500 in 1996 to 54,374 in 2000. However, this is 1.6 percent increase does not take into account those CNSs with dual training as NPs. About 86.9 percent of these CNSs were employed in nursing, however, only 24 percent were practicing with the position title of clinical nurse specialist. About 24.7 percent reported being in nursing education positions and the remaining CNSs reported a variety of position titles spanning multiple functional areas.

**Gender.**

In March 2000, 52.7 percent of men RNs reported graduating from an associate degree program compared to 39.6 percent of women; 30.5 percent of women RNs graduated from a diploma program compared to 14.3 percent of men. The percent of women and men completing a baccalaureate or higher degree program was 29.6 percent and 32.5 respectively. Although still a small percent of the RN population, more men are entering nursing. Between 1996 and 2000, the percent of men in the RN population increased from 4.9 percent to 5.4 percent. The percent of men employed in nursing increased from 5.4 percent in 1996 to 8.9 percent in 2000. The overall nursing workforce is reported to be 90% female and 10% male.
**Geographic Distribution of the Registered Nurse Population**

Registered nurses are responsible for a large portion of the health care provided in this country. Ns make up the largest group of health care providers, and are 77 percent of the nurse workforce. Historically, RNs have worked predominantly in hospitals; in 2000, 59.1 percent of RNs worked in hospitals. A smaller number of RNs work in other settings, such as ambulatory care, home health care, and nursing homes.

**Research on Differences in Empowerment and Strain Based on Demographics**

Most research suggests that there are no statistical differences based on primary demographics for the variables in the present study. Some authors have argued that prevailing empowerment constructs may be biased toward a masculine understanding of the concept rather than a female understanding (Alimo-Metcalfe, 1995; Riger, 1993).

Most leading researchers of empowerment in nursing have studied gender and number of years working in critical care nursing and found no differences (Kanter, 2001; Laschinger, Finegan, Shamian & Wilk, 2004). In a sample consisting of nurses who worked in a variety of different specialty areas including medical-surgical (27.3 per cent), critical care (37.6 per cent), maternal child (12.7 per cent), and psychiatry (22.4 per cent). Using t-tests, they correlated age, years of experience, gender, full-time with part-time workers and unit tenure with environmental and psychological empowerment for two samples. None of these comparisons was significant.

Laschinger (1996) later studied gender and empowerment specifically and found that results still did not vary across gender groups. They completed a multiple-group second-order confirmatory factor analysis was performed to verify if the factor structures of Spreitzer’s psychological empowerment scale was invariant between groups of 191 males and 200 female nurses. Results indicated that the structure of the psychological empowerment scale was
invariant across genders. Thus, they suggest that these results do not justify treating men and women differently when studying their cognitions associated with psychological empowerment.

The conclusion is similar to those of other related empirical research, suggesting that there are few if any, major differences in the way empowerment is construed across genders, whether the construct is defined as a general sense of power or even as the perceived access to organizational power structures (Kraimer, Seibert & Liden, 1999). For instance, in studies testing for differences in perception of empowerment in genders have found that gender differences often are actually a reflection of organizational position and work status. There is also very little literature on differences in number of years working in critical care environments and the independent variables in the present study. Most research has actually shown no differences in the independent variables with regard to number of years working in the same critical care work environment (Laschinger, Finegan, and Shamian & Wilk, 2000). Most research on nursing psychological strain studies nurses with varying numbers of years working in critical care and varying numbers of years working on a specific unit. Almost no studies were found that examined number of years on a specific critical care unit with the dependent variable psychological strain.

*The Nursing Context and The Present Study*

The general population of nursing workforce is aging and the average age of a registered nurse increased from 37 years in 1983 to 42 in 1998. Additionally, enrollments in registered nursing programs have declined over the past 5 years, shrinking the pool of new workers to replace those who are leaving or retiring. The problem of nursing shortage is expected to become increasingly serious in the future as the aging of the population substantially increases the demand for nurses. Registered nurses (RN’s) are responsible for a large portion of the health care
provided in this country. RNs make up the largest group of health care providers and are 77 percent of the nurse workforce. Individuals usually select one of three ways to become an RN—through a 2-year associates degree, 3-year diploma or a 4-year baccalaureate degree program.

As of 2000, 40.3 percent of nurses had received their training through an associate program, while 29.6 percent and 29.3 percent had received their training in a diploma or baccalaureate degree program respectively. LPN programs are 12 to 18 months in length and generally focus on basic nursing skills such as monitoring patient or resident condition and administering treatments and medications. Once they have completed their education, RNs and LPNs must meet the licensing requirements of their state to be allowed to practice (Heinrich, 2000). There has been a dramatic shift upward in the age distribution of registered nurses in the past ten years. The average age of the RN population in 2000 was 45, almost one year older that the average in 1990. Over half (52 percent) of all RNs were reported to but under age of 40 in 1980; by 2000 fewer than 1 in 3 were younger than 40. While the current nurse population continues to age, fewer young people are choosing nursing as a profession.

A contact person at the association of critical care nurses stated that 90% of critical care certification nurses are female and 10% are male (Bureau of Health Professions, 2001). Critical care nurses are required to practice as a registered nurse for 1,750 hours in direct bedside care of critically ill patients during the previous two years. Clinical practice hours for CCRN examination or renewal eligibility must take place in a US based facility or in a facility determined to be comparable by verifiable evidence to the US standard of acute and critical care nursing practice.
The Nursing Context and Psychological Strain

Harding, Munro & Rowell (1998) offer some key points that relate to nursing strain and how the environment affects that strain. In particular, their research offers a definition of control that resembles empowerment and suggests that it is more closely related to the perception of strain in an environment than any other factor (Karasek & Theorell, 1990).

It specifically studied how nursing environments have impacted nurses’ well-being using Karasek’s model, one of the leading models for predicting occupational strain, to predict a broad range of health and behavioral consequences of the work environment (Sparrow & Gaston, 1998). It is emphasized that it is the belief in personal control (like the definition of Randolph and Blanchard) that has the most significant impact on experienced strain. This is important given that empowerment is largely an effort to offer people perceptions about how they are being treated and how they are important.

The study was conducted at a private inpatient facility for psychiatric patients. The sample consisted of psychiatric nursing staff drawn from each of the five units of an Australian private psychiatric hospital. Results found that for these nurses, the increase in control over tasks, job execution and the work environment diminished psychological symptoms. Yayli, Yaman, & Yaman (2003) illustrated the use of the BSI. The aim of their study was to evaluate the relationship of work related strain with work life variables by using the Brief Symptom Inventory. A survey was conducted among hospital staff of a university teaching hospital in Turkey. Females had higher depression and anxiety scores than did males and graduates of university programs had higher somatization. They concluded that even though the respondents did not seem generally to be dissatisfied concerning their work-life, the majority of staff had depressive symptoms and were distressed (Yayli, Yaman & Yaman, 2003). There has
been much research to support that work can influence mental well-being. Most relevant to the present study is research that finds that depression, anxiety and psychological distress have been shown to be elevated in individuals working in high strain jobs. Therefore, it makes sense to use these symptoms as indicators of high stress in a nursing setting. It is also relevant that Laschinger supports Spreitzer’s notion of psychological empowerment used in this study as well as the notion that low-decision latitude is associated with mental strain.

Lee (2002), indicates that nurses’ high job strain is well documented particularly in acute care and that it has hazardous impacts on nurses’ health and their ability to cope with job demands. The literature review presents an investigation conducted by the National Institute for Occupational Safety and Health in the USA where nurses were found to be one of the occupations that had a higher than expected incidence of stress-related health disorder. In a study of job stress among hospital nurses, it was found that 27% of the subjects experienced psycho-physiological symptoms of stress, and 38% reported consulting a doctor in the past 6 months.

The health status of nurse educators was also found to be inversely related to job strain (Lee, 2002). One thousand self-report surveys were distributed to nurses in Hong Kong in various primary care settings. The findings were significant in indicating that job psychological strain, coping and health are distinct from their colleagues. This continues to support the notion that nurses have significant psychological strain and that this psychological strain affects well-being.

Staffing levels provide the most basic context and the most direct type of constraints on nursing practice. When staff levels are low, a nurse’s workload and job strain intensifies, increasing the likelihood of poor patient outcomes such as on-the-job injuries and unsafe patient
outcomes. Hospital environments often first attempt to meet these demands with structural changes such as rotating shift patterns, work overload and structural upheavals. The number of hospital employees on staff for each patient discharged, including nurses, declined by more than 13 percent between 1990 and 1999. This increases the work intensity for individual nurses.

The potential hazardous consequences of psychological strain on performance in nursing demonstrate the need to understand not only the antecedents but also preventive dimensions to psychological strain for healthcare workers (Clegg, 2001). Patient safety experts speak frequently of health care’s “sharp end”, situations in which staff members make critical decisions. If incorrect, or if poorly executed or timed, these decisions can cause accidents and patient harm (Clarke, 2002). Experts are now considering mistakes as symptoms of organizational problems including a failure to create an environment of respect, shared responsibility and open communication, dimensions closely related to environmental empowerment (Clarke, 2002). Collectively, these studies suggest that nursing is an excellent venue to study the effects of psychological and environmental empowerment on psychological strain.

**Empowerment and Psychological Strain**

Empowerment could help to reduce psychological strain because it is the way in which an individual interprets a situation that is central in determining whether the situation is regarded as stressful (Clegg, 2000)). Clegg (2000) argues that the economic consequences of occupational strain are so apparent that scientific skepticism has wavered in favor of economic necessity. The majority of these focus on training techniques such as relaxation, meditation and cognitive test restructuring which are often criticized as palliative rather than preventative. The more
successful usually try to aim to increase employees’ participation and autonomy similar to empowerment strategies.

Clegg (2000) has found that in nursing units where poor clinical leadership was replaced with dynamic transformational leadership styles that parallel those of empowering leaders, satisfaction improved, psychological strain was reduced and satisfaction levels increased. Laschinger (2001) tested an expanded model of Rosabeth Moss Kanter’s structural theory of work empowerment by testing causal links between structural and psychological empowerment, job strain, and work satisfaction. She found that structural empowerment directly affects perceptions of psychological empowerment and the findings supported Kanter’s claim that social structural factors in the workplace create conditions, which result in feelings of empowerment among employees. This study was a predictive nonexperimental design with a random sample selected from a provincial registry list of equal numbers of males and females totaling 404.

Laschinger used Conditions of Work Effectiveness Questionnaire-II (Laschinger & Havens, 1997) the Job Activities Scale-II (JAS) the Organizational Relationship Scale-II (ORS) (Laschinger, 2000), the Psychological Empowerment Scale (Spreitzer, 1995), the Job Content Questionnaire (Karasek & Theorell 1990), and the Global Work Satisfaction Scale (Laschinger & Havens, 1997). Cronbach alpha ranged from .69 - .92. Low levels of empowerment (environmental or psychological) were linked to attitudinal and behavioral reactions, accidents, burnout, health complains, and illness.

**Nursing Management Today and Empowerment**

While general management theory provides a broad array of information critical to improving strategies for management, the company context must also be seriously considered. This is particularly true for hospital nursing management since the hospital context is
complicated with dimensions that may prevent or slow any changes proposed in management functioning. Thus, healthy leadership is considered a unique profession unto itself (Almost & Laschinger, 2002) In order to illustrate this point, it is necessary to first present common pressures in business, current management theories and then examine if and how they have been incorporated in hospital nursing management.

The changing environment has created pressures that are common to the business world including hospitals and healthcare. Conger & Kanungo (2001) asserts that competitive pressures and fierce competition has forced everyone to seek innovative strategies, upgrade product quality, and scrambled faster for markets.

The key forces that leaders will have to manage now are dramatically heightened competitive pressures and significant changes in the backgrounds and needs of employees (Conger & Kanungo, 2001). One of the biggest organizational lessons to be learned in the late 1990’s may be how to lead transformation and succession simultaneously and master revolutionary change with enthusiasm. Conger also asserts that the organizations of the future will be far more decentralized than today’s pyramids and will depend on cross-functional project or process team, each team positioned to answer a specific need, such as faster market responsiveness.

Leaders will increasingly take on the role as a teacher, coach, and consultant. As Rosabeth Moss Kanter comments that managers and executives will need to become passionately dedicated to ‘visions’ and fanatically committed to carrying them out—but be flexible, responsive, and able to change direction quickly.

Conger and Kanungo 2001) explains that the increase in decentralization will mean that persuasive and inspirational communication skills will be the necessary tool whereas formal
authority will become less effective in directing and mobilizing staff. A leader’s success will be
determined by his or her ability to motivate through words and through the strength of clearly
communicated plans and goals, facilitate teams, and make benefits from diversity.

In order to accomplish this he says that there are three competencies that leaders will
have to have. They will be required to be strategic opportunists, globally aware, and capable of
managing highly decentralized organizations. In light of this new leadership (French & Bell,
1999) is careful to distinguish between managers and leaders. He characterizes managers as
individuals who maintain the balance of operations in an organization by relating to others
according to their role, and are detached, and impersonal. Leaders on the other hand are
characterized as individuals who are able to create new approaches, relate to people in more
intuitive and empathetic ways, and seek risk where opportunity and reward are high.

Empowerment at some level is generally included in current management practices.
Environmental empowerment means to give employees more power to make their own
decisions, without the involvement of middle management. Blanchard (1997) encourages
business leaders to recognize that people in organizations have tremendous power in their
experience, knowledge, and internal motivation. With such rapid change both of a technical and
structural nature, major issues such as role ambiguity, conflict and shifting patterns of
responsibility contribute directly to work insecurities and pressures. The team component of his
model is consistent with recent management literature that suggests because companies have
moved form control-oriented, functional hierarchies to a faster and flatter team-based approach;
teams have become the engines for companies today.

Theories espousing the organization utility of empowering employees usually argue that
it benefits the organization as well as the individual in the end (Beehr, 1995). Environmental
empowerment has also been associated with psychological empowerment reduced psychological
strain and the concept of environmental empowerment has been linked to work satisfaction
(Landsbergid, Schnall, Deitz, Friedman, & Pickering, 1992; Munro, Rodwell & Harding, 1998).
Laschinger and Havens (1996) found that in nursing the work empowerment was strongly related
to perceived control over nursing practice, which was subsequently related to reduce
psychological strain. Additionally, it was found that working conditions that limited autonomy
or control has been consistently identified as the primary reason why nurses leave the profession.
This implies that increased autonomy had a direct effect on reduced psychological strain that in
turn, directly affected how patients experienced their care from the nursing staff. This research is
important because many of the factors that have been related to reduced psychological strain are
a part of Randolph and Blanchard’s (1995) and Spreitzer’s (1995) comprehensive empowerment
construct.

Spreitzer (1997) suggests that there are several consequences of empowerment worth
noting. Two consequences of empowerment are effectiveness and innovative behavior in relation
to effectiveness and innovation in the complex little-defined roles of managers (Lawler, 1983).
Research that supports each of Spreitzer’s four dimensions are positively related to managerial
effectiveness as presented in the section on psychological empowerment. She goes on to suggest
that in a managerial context, empowerment has great potential to contribute to these outcomes
because work processes cannot be solely structured by formal roles and procedures. Because
empowered managers are more likely to see themselves as competent and able to influence their
jobs and work environments in meaningful ways, they are likely to proactively execute their job
responsibilities (Spreitzer, 1997). More specifically, Thomas & Velthouse (1990) argued that
empowerment would increase concentration, initiative, and resiliency and thus heighten
managerial effectiveness. This has implications for all management practice including nursing management.

Hospital environments often first attempt to meet demands with structural changes such as rotating shift patterns, work overload and structural upheavals. It is well accepted in the management literature that institutions must also look realistically at the nursing management role. While attempts are being made to improve healthcare management, there are a number of paradoxes in healthcare that often act as barriers to developing the kind of leaders needed in hospitals today. Complicating the quest for a standard set of core leadership competencies in healthcare is that healthcare comprises a plurality of organizational settings in terms of both focus such as acute care, ambulatory care, long-term care, insurance and managed care, and consulting organizations.

The most difficult barrier to implementing new management theories in hospitals is the traditionally bureaucratic, complex and highly departmentalized structure with its ensuing culture and leadership style. On the one hand, the professional nurse is expected to develop an ever-increasing repertoire of technical expertise in clinical care, and yet there is a distinct lack of power granted for them to make managerial decisions. Also problematic are the unique relationship hospitals have with physicians, the conflict between hospital management philosophies and some of the new management philosophies and existing quality assurance programs and union-management relationships.

Finally, management in hospital care settings resists changes that destabilize their accepted standard operating procedures. Typically, medical procedures of any kind require strict standards in order to give the patient the best care and the following of those standards marks the good employee. This explains why many administrators and managers fail to be proactive in
changing management plans. The following is a list that describes why it may be difficult for nursing management to adopt some management strategies (Cohen, 1988).

1. Distrust of interdependence. Most healthcare manager’s rise and some managers begin to believe that their continued success depends on their independent actions and accomplishments. These managers know they need others, but they fear their need for help will be taken as a sign of their personal or managerial weakness.

2. Unfamiliarity with staff’s actual contributions. Managerial ignorance is sometimes a result of overwork or having too little time to manage what employees are actually doing, or that close supervision will destroy an otherwise effective delegation system.

3. Aversion to planning. Nurse Managers are usually action-oriented; they like to see things happening. Building and managing effective teams requires a lot of planning, something at which many managers fail.

4. Attraction to staying busy. Managers are caught doing everything to stay busy with the result that they are overlooking the bigger goals. This can come from feeling left out of the day-to-day activities.

Optimal management of resources is clearly a very complex and difficult task for healthcare systems. General management theory has demonstrated the importance of empowerment, communication, and teamwork among the many considered. This is also true for nursing management although there have been efforts to incorporate the special nuances that hospital settings have to offer.

Some nursing management researchers contend that leadership requires the following ingredients: focusing on opportunities instead of threats, taking risks, engaging in innovative and creative change, envisioning the future, empowering staff and celebrating successes no matter
how small these may be. Laschinger (1996) found that staff nurses felt more empowerment in their work setting when their leaders encouraged autonomy, facilitated participative decision making, and expressed confidence in employee competence. Laschinger and Havens (1996) examined the effect of job-related empowerment on staff nurses’ occupational mental health and overall work effectiveness and found positive relationships.

Empowerment is becoming an accepted management strategy in nursing. The concept of empowerment is prevalent in the literature of social work, nursing studies, health promotion and both nursing and general education. It would appear that extreme lack of control can have potentially devastating effects on an individual’s health, and control in itself is linked to issues such as self-esteem and coping with high fear situations. People who cope well tend to respond to fear in a realistic rather than defensive way. Health care workers, by the nature of their job, will invariably be faced with situations that will invoke feelings of fear or dissonance. The authors put the case that structural changes are not sufficient to allow greater empowerment.

Studies of Kanters (1993) which address power relationship in organizations involving of nurses have shown that feelings of nursing empowerment and impact in managerial decision making remain low. This is likely to be true since the clinical areas where nurses gain experience are run on bureaucratic lines and within this structure role models will often demonstrate controlling behavior, often resulting from the managerial ethos of the area. This is such a central issue of importance at a time when the profession is yet again experiencing change that it should be the ideal time to allow nurses a greater say and increase participative decision making to enhance responsibility and feelings of success (Dempsey & Larson, 2004).

Finally, is the similar focus on teams as has been found in the general management literature. Teams and functional groups (Dempsey & Larson, 2004) surround hospitals and
healthcare facilities. Every day, hospitals and healthcare organizations struggle to rely on teams; however, the allegiance to the team in hospital settings is often undercut by the need to maintain their position in their own department.

While teams do make sense for nurses, given the provision of medical care and the processing of myriad clinical and administrative activities, there seems to be considerable managerial resistance within healthcare organizations to accept and rely on team collaboration. One obvious problem mentioned earlier is that the organizational structure is a major barrier to the development and use of teams. Although often beyond the control of individual managers, the design of the organization affects the habits and attitudes of management.

Three team-building strategies are presented: (Cohen, 1988; Katzenbach & Douglas, 1994).

1. Regularly and frequently, schedule team-building session. Clinical and administrative professionals in healthcare are not natural team players. Team building attempts with people who like to fit into a niche, do their work conscientiously and protect their turf cannot be a one-time occurrence. Bosses can become coaches and should be regularly and frequently.

2. Emphasize team building to be satisfying and fun for all involved. Help them to realize their own contributions to the larger organizational picture and highlight the talents and skills of team members.

3. Base team-building efforts on trust. Members are going to have to rely on each other in moments of stress and confusion.

Regarding team leadership, the physician leaders are fundamental to the success of the guidance team and ultimately, the entire health system (Boss, Koberg, Goodman, & Senjem 1999). When an organization makes a deliberate effort to foster physicians to take leadership,
roles, the resultant collaboration with the hospital benefits individual and the institution. This is especially true in the areas of pre-operative services where costly technology and high utilization of human and supply resources are constants.

They contend that the physician’s team experience is further enhanced when hospital administrators also foster leadership at every level within their own ranks. Middle management, especially in nursing, is increasingly identified as the center of communication and the organizational structure. Organizations that provide autonomy, education and support to this group will profit.

The literature on healthcare management includes nursing management competencies similar to the competencies provided by researchers in general management theories. Numerous health-related organizations as well as health management researchers and practitioners have been developing competency models. Academic researchers have also attempted to specify the SKA’s (skills, knowledge, abilities) necessary for effective healthcare management practice (Lundstrom, Pugliese, Bartley & Cox, 2002), content analysis and evidence-based management principles.

In summary most management theories work to explain key workplace patterns but cannot possibly address all of the variations that may occur in every work context. Nursing management follows and adopts developments from current management theory, but the variations in the workplace context for nurses must be seriously considered. In other words, while all business has its own unique context, hospitals in particular have to tailor some of the strategies and alter some of the outcomes of those theories. For instance, a hospital will never be decentralized but can still develop teams that strategize around needed changes. The nurse
manager’s roles are moving toward greater decision making power and acting as a stronger liaison between physicians and staff.

At the heart of any significant change within nursing management is the need for effective nursing leadership and not just management (Dempsey & Larson, 2004) where fundamental values and attitudes may need to adopt a more transformational approach. This is consistent with general management theories. Leadership is needed to create a climate of trust to motivate and include staff towards the changes of which they are a part.

**Empowerment and Nursing Psychological Strain**

Chandler (1991), have also studied successful strategies for teamwork in nursing with strategies that resemble Randolph and Blanchard’s model. In this study, it is argued that teamwork follows the dynamic path of group development. The authors evaluated their survey of teamwork in 14 ICU’s and explain how nurse managers can evaluate and increase teamwork with a unit assessment process. Based on a survey they designed with consistent results for successful unit development, they offered these recommendations: seek support from upper-level management, convey an interdisciplinary assessment, planning and implementation committee, develop an assessment process, organize and report results to the team for feedback and continue this process.

This study is important because while it does not address empowerment directly, it does address a philosophy and a very similar intervention. They suggest very promising results but mention that few prior related studies have ever been done in healthcare. High-involvement, defined almost the same as empowerment, include structural support, autonomy, team collaboration, training, information sharing and empowerment specifically. Their research found
that high-involvement work settings have been associated with reduced employee turnover, increased productivity, cash flow, financial performance and market values.

Laschinger, McDermott, & Shamian (1996) contend that in the last decade, there has been a dramatic change in how healthcare is structured with resulting uncertainty in healthcare environments and negative consequences for nursing work environments. Campbell (1987) notes that these changes have decreased nurses’ productivity, causing increased work stressors and decreased quality of patient care. The link between nurses’ work conditions and patient outcomes in that hospitals with strong supportive nursing work environments had significantly lower mortality rates than those that did not. The objective of this study was to test a theoretical model specifying relationships among structural and psychological empowerment, job strain and work satisfaction. A predictive, experimental design was used to test the model in a random sample of 404 Canadian staff nurses.

These researchers also explain that according to Kanter, that if an environment is empowering it will result in increased feelings of autonomy, higher levels of self-efficacy, and ultimately greater organizational commitment to the organization. Autonomy and self-efficacy are components of what Spreitzer (1995) defines psychological empowerment (Laschinger & Spence 2001). This article presents a helpful literature review that illustrates the importance of structural empowerment in organizations by linking Kantar’s conception of empowerment to psychological empowerment and job strain.

This relates well because it argues that both environmental and psychological empowerment are important to strain levels and that these environmental empowerment components, similar to Randolph and Blanchard’s (1997) theory, are related to organizational outcomes. Psychological strain has also been shown to increase sick time, tardiness, workers
compensations claims, workplace conflict, violence, and substance abuse (Gordan, 1991). They also mention that previous research has shown that empowerment is significantly related to nurse perceptions of the use of autonomy and the use of participative management (Kutzscher, 1994; Laschinger & Havens, 1996; Laschinger & Wong, 1999; Laschinger & Spence 2001).

It is a cross-sectional study, but because there were equal proportions of males and females, which are not representative of the nursing workforce, they ruled out this potential source of bias, by running the models on a proportionate stratified random sub sample representative of the general proportions of nursing in Ontario. Their research looks deeply into what empowerment means for nursing far beyond structural changes, arguing that structural changes alone cannot allow greater empowerment. Such large-scale change is essentially cultural, attitudinal, and central to governmental proposals for NHS reform (Lewis & Urmston 2000). The authors consider the real effect of nursing empowerment; based in part on the work of Kanter and work on empowerment and the role of nursing and not power relationships within the organization.

Lewis and Urmston (2000) explain what happens in the absence of empowerment including powerlessness, hopelessness, alienation, victimization, subordination, oppression, paternalism, and loss of sense of control over one’s life and dependency. All of these have implied relationships to mental health and well-being. They also imply that the absence of empowerment is well understood in nursing but how to develop empowerment is not well understood and should be the next step in nursing research (Lewis & Urmston 2000).

They further point this out in their literature review, which provides strong support for links between low empowerment, health and well-being. Lewis and Urmston (2000) say that the idea of health promotion is a process of enabling people to increase control over and improve
their health and thus links with empowerment as a process of helping people to assert control over factors which affect their lives.

According to Kanter (1993), employee empowerment inhibits burnout, while employee powerlessness cultivates burnout. Studies of Kanter’s (1993) power relationships in healthcare have shown that feelings of nursing involvement in managerial decision-making remains low.

At the heart of any significant change within nursing, and at the center of the debate for empowerment is the need for effective nursing leadership, not just management. Leaders for major change within nursing, where fundamental values and attitudes may need alternation need to adopt a more transformational approach which rethinks attitudes and culture.

This is a central component of the argument for effective staff utilization and empowerment. This last concept seems to be one feature of self-effective behavior, and gives indications as to how nurses envisage the effectiveness of their work. In a study by Lewis and Urmston (1994), self-effective behavior was investigated via a repertory grid technique in nurse educators. In particular, allowing freedom for professional decision-making and the need for close effective teamwork free from unnecessary senior managerial direction were positively correlated with increased self-efficacy.

Nursing’s relationship to medicine is changing, and professional boundaries are becoming increasingly blurred. On the one hand, the professional nurse is expected to develop an ever-increasing repertoire of technical expertise in clinical care and yet we perceive a distinct lack of empowerment for effective managerial decision-making and nursing control. The development of empowerment is vital to the workforce, and extensive evidence is available within organizational studies that managerial practices that criticize, punish, and give little praise mitigate strongly against such development.
Opportunities for nurses to participate more fully in decision-making and to develop a greater work ownership denote a move to a power relationship of shared responsibility. The high correlation with empowerment and reduced strain make empowerment look very promising. Managers must look realistically at the nursing role and participation in decision-making. Undervalued and disempowered nurses may only be too ready to leave the profession itself, putting an intolerable burden on existing staff.

Empowerment efforts were found to have positive impacts on psychological strain responses in nurses, suggesting promise for the use of empowerment strategies. High levels of psychological strain are well documented for nurses and are related to mental and physical symptoms. Given that empowerment strategies have been found to reduce psychological strain, many researchers implied that empowerment strategies should be a focus in health care.

The empowerment literature also supports each dimension suggested in Randolph and Blanchard’s empowerment definition and has been related to psychological strain (and psychological strain in nursing) symptoms. Spreitzer, who developed the psychological empowerment model, also supports these dimensions as important to employee psychological strain in her own research. It was also revealed that Spreitzer’s dimensions have frequently been used in nursing literature and correlated with reduced nursing psychological strain. Finally, the review supports a study that aims to use a construct of environmental empowerment that has not been used in nursing with Spreitzer’s well defined psychological empowerment construct and determine which dimensions may be predictive of nurses psychological strain.

The three theories that are synthesized into a conceptual framework for the present study are Blanchard’s and Randolph’s (1997) theory of environmental empowerment, Gretchen Spreitzer’s (1995) theory of psychological empowerment, and Osipow’s (2001) theory of
psychological strain. The two distinct empowerment constructs are used to determine relationships between one another and to determine the predictive power of empowerment on psychological strain.

It appears that extreme lack of empowerment or the lack of decision-making latitude can have potentially devastating effects on employee health, self-esteem and the ability to cope with high stress situations. Given the changes in healthcare, particularly staff shortages, it will become increasingly important for nurses to be able to take on more responsibility and increased autonomy (Kanter 1993). It is therefore the ideal time to allow nurses a greater say and increased participative decision making to enhance empowerment (Dempsey & Larson, 2004). Randolph & Blanchard’s (1997) dimension, clear structures, speaks to the importance of providing policies and practices that allow employees to feel comfortable making decisions with a higher likelihood of accuracy.

A similar focus on teams has been found in the nursing management literature. Blanchard’s construct dimensions (clear structures, information sharing and team accountability) are similar to the researched dimensions of Kanter (1993) in nursing. Randolph and Blanchard’s theory appears to be more useful in healthcare where teams and functional groups have become an important means of work and most nursing research excludes this important component (Dempsey & Larson, 2004). Every day, hospitals and healthcare organizations struggle to rely on teams but face infighting, internal friction and competition, all of which interfere with lateral and collaborative communication (Cohen, 2003).

Spreitzer (1995) suggests that no one-dimensional conceptualization of empowerment by itself would capture the full essence of the concept. Rather than being antecedents or outcomes of each other, the four dimensions represent different facets of the psychological empowerment
construct. This construct is well suited for use with environmental empowerment and psychological strain in critical care nursing because it has been used in that context in several nursing studies and was associated with reduced nursing strain. The four dimensions are also represented in the nursing literature as separate dimensions related to reduced psychological strain and positive work outcomes.

Since Spreitzer (1995) defines psychological empowerment as the psychological state that employees must experience for managerial empowerment interventions to be successful, she is defining it as a logical outcome of managerial efforts such as those presented in Randolph and Blanchard’s (1995) theory that included team accountability, clear structures and information sharing. Spreitzer (1995) found that managers’ access to strategic information in the organization was significantly related to their perceived psychological empowerment. This is consistent with the notion that psychological empowerment is a consequence of structural empowerment conditions (Laschinger & Spence, 2001).

Osipow (2003) developed a theory and survey instrument based on the earlier work of Lazarus. Like Lazarus, his view suggests that it is no longer appropriate to search for single cause and effect antecedents to psychological strain (Briner & Reynolds, 1999). He contends that psychological strain is a transactional term that does not reside only in the individual (strain) or only in the environment (stressor) and measures psychological symptoms.

Osipow (2003) developed a psychological strain survey for use in occupational settings. The survey assesses such symptoms as anxiety, depression, and lethargy, which are symptoms linked to poor coping skills. The Occupational Psychological Stress Inventory (OSI-R) developed by Osipow (1998) is the general measure for psychological strain used in the present
study. This construct is well suited because it assesses strain outcomes commonly found in critical care nursing.

A definition of critical care is included to provide an understanding of how the three constructs are supported by the chosen critical care environment. A fuller definition of critical care and its context is offered later within this chapter and again in Chapter 2. The hospital context in which the present study is proposed defines critical care as the most intensive unit that serves the most critically ill patients. The ratio of nurse to patient is much lower, often one nurse to one or two patients, and the nursing responsibility level is higher than for any other kind of patient with the frequency of intervention every 10-15 minutes.

To become a critical care nurse requires practice as a registered nurse for 1,750 hours in direct bedside care of critically ill patients during the previous two years, with 875 of those hours accrued in the most recent year preceding application. Clinical practice hours for a Certified Critical Care Nurse (CCRN) examination or renewal eligibility must take place in a US based facility or in a facility determined to be comparable by verifiable evidence to the United States standard of acute and critical care nursing practice. Nurses serving as managers, educators or preceptors may apply their hours spent supervising nursing students or nurses at the bedside. Nurses in these roles must be actively involved in caring for patients at the bedside.

The other certification exam is the Critical Care Nurse Specialist (CCNS) exam. This exam has specific eligibility requirements including 500 hours in direct clinical practice within the master’s program (until July 2006 hours may also be earned as a transcript clinical practicum). Candidates must obtain official final copies of all graduate level educational transcripts submitted with the CCNS exam application. Evidence of expertise in clinical knowledge, skills and judgment is also required as demonstrated by one of the following: 1.
Basic or advanced certification in nursing, 2. Publication demonstrating expert knowledge in an identified clinical field, or 3. Presentation at a local, regional or national conference on a clinical nursing topic in a field of expertise (Clegg, 2001).

Within an inherently intense environment, many studies have discovered workplace factors associated with strain, but fewer variables have been discovered that could be negatively related to strain. The present study seeks to discover which factors or sub-factors of the two dimensions of empowerment are related to strain in critical care nursing. Indirectly, this could serve to identify preventive strategies for psychological strain. Given that psychological strain has been associated with hazardous outcomes in critical care nursing settings, any discovery regarding antecedents to reduced strain would be helpful. The direction of the relationship of the variables makes sense for practical reasons since most strain studies focus on what increases strain or the negative affect of strain on some outcome such as job performance (Boss, Koberg, Goodman & Senjem, 1999). This study will examine look for dimensions that are associated with reduced strain.

Many empirical research studies link both psychological and environmental empowerment with reduced job strain in healthcare (Laschinger & Havens, 1996; Almost, 2004). Environmental empowerment has been associated with psychological empowerment and reduced psychological strain (Beehr, 1995). Spreitzer (1995) found relationships between environmental empowerment and psychological empowerment and found that low role ambiguity; strong sociopolitical support, access to information, and a participative climate were associated with perceptions of empowerment. These findings support a compatibility of Spreitzer’s (1995) construct with Blanchard’s (1997) environmental empowerment construct. For instance, sharing on information (an environmental empowerment dimension) was found to be significantly
related to the psychological empowerment facets of meaning, self-determination, and impact (psychological empowerment dimensions). Teamwork (an environmental empowerment dimension) was related to meaning, and concern for performance was related to meaning and self-determination. Spreitzer (1995) has used Randolph and Blanchard’s (1997) dimensions of environmental empowerment with her own dimensions of psychological empowerment in many nursing studies.

The empowerment literature suggests a correlation between empowerment dimensions suggested by Randolph and Blanchard (1997) and reduced psychological strain in nursing (Landsbergid, Schnall, Deitz, Friedman, & Pickering, 1992; Munro, Rodwell & Harding, 1998). Laschinger and Havens (1996) and Huston and Marquis (2003) found that in nursing, empowerment was strongly related to perceived control over nursing practice, which was subsequently related to reduced psychological strain.

**Summary**

These three constructs, environmental empowerment, psychological empowerment and psychological strain have been used in critical care nursing studies and have provided an understanding of how empowerment may be associated with reduced psychological strain. What is unique about the present study is how the constructs environmental empowerment (Randolph & Blanchard, 1997) psychological empowerment (Spreitzer, 1995) and psychological strain (Osipow, 2001) are used in the context of critical care nursing. Additionally, the present study differs from other research on strain in that it addresses factors that reduce strain, not the factors that cause strain.
Chapter Three Methods

Chapter Three provides a description of the research design, research questions, the population and sample, instrumentation, data analysis and a summary. The purpose of the present study is to examine the impact of psychological empowerment and environmental empowerment on the psychological strain of critical care nurses. There are three specific objectives of the present study: a. To determine the perceptions of empowerment and psychological strain in critical care nursing, b. To assess the relationship between high levels of empowerment (determined as being 1 standard deviation above the mean) and low levels of empowerment (determined as being 1 standard deviation below the mean) with psychological strain, and c. To determine the specific dimensions of empowerment that are associated with reduced strain. Randolph & Blanchard’s (1997) environmental empowerment construct has shown in previous research to consist of three dimensions: (1) Information Sharing, (2) Clear Structures (I renamed this from the original title “Autonomy through Boundaries” which was confusing) and (3) Team Accountability (Randolph & Blanchard 1997; Kanter, 1993; Kraimer, Seibert & Liden 1999). Spretzer’s (1995) psychological empowerment construct suggested four dimensions: (1) Meaning, (2) Competence (3) Impact and (4) Self-determination (Spreitzer, 1997; Thomas & Velthouse, 1990). The present study sought to determine the extent that these dimensions of the two levels of the empowerment construct were related to and predictive of psychological strain.

Research Design

This is a non-experimental cross-sectional predictive ex post facto study designed to assess how dimensions of two levels of empowerment are associated with psychological strain. The data collection method was self-administered survey design. The data analysis section will provide additional details.
Research Questions

The research questions are as follows:

Questions #1. Do nurses who perceive high environmental empowerment and high psychological empowerment report less psychological strain than nurses who perceive low environmental empowerment and low psychological empowerment (means, standard deviations, t-tests and if significant, Cohen’s d for magnitude of effect)?

Question #2 What is the predictive power of psychological empowerment (meaning, impact, competence, determination) and environmental empowerment (Factor 1 – clear structures and team accountability; Factor 2 – information sharing). on psychological strain of critical care nurses?

Population and Sample

This section provides information about the hospital context and the population of the study. The hospital is a large state hospital located in a large metropolitan area in the Southeastern United States. The hospital recently received re-accreditation by The Joint Commission on the Accreditation of Health Care Facilities, earning a cumulative score of 96 out of 100 (to ensure anonymity only general and publicly reported information is provided). There are approximately 130 hospitals in the state with 4 that are similar in size and services within a 40 mile radius of the hospital used for the present study. It has achieved an outstanding patient satisfaction rating of 95% or higher for inpatient customer satisfaction. Each year it manages almost 15,000 emergency visits, over 30,000 discharges, almost a million outpatient visits, 11,229 inpatient surgeries and 20,883 outpatient surgeries. The total number of employees exceeds 6,000 including over 2,000 nurses of which 350 are critical care nurses.
The target population was all critical care nurses employed by approximately 10-15 local state hospitals in the Southeastern part of the country. There are approximately 3000 total critical care nurses in the population. The sample was 350 critical care nurses from one state hospital in the region and was a convenience sample using a naturally formed group (Creswell, 2003). The researcher had access to this group from having worked as an organization consultant for the company for five years. The hospital is similar to and adequately represents state hospitals in this region based on size, number and types of patients served and specific critical care accreditation requirements that are common to all critical care nurses in the target population. The 350 critical care nurses employed at the hospital represent the number critical care nurses in hospitals of the region and naturally were similar based on the specific educational and professional requirements in order to be a critical care nurse. In addition, research shows similarities in gender and age across nursing populations (Association of Critical Care Nursing, 2007). Therefore, it was implied that the results of the present study would be applicable to other similar hospitals.

Critical care is the most intense of three levels of nurse care: acute, immediate and critical. Critical care requires a 1-2 nurse to patient ratio and the frequency of interventions is very high (interventions approximately every 15 minutes or less). In order to be eligible to obtain CCRN certification, which is the critical care certification, a nurse must meet specialized requirements. Critical care nurses are required to practice as a registered nurse for 1,750 hours in direct bedside care of critically ill patients during the previous two years. Clinical practice hours for CCRN examination or renewal eligibility must take place in a US based facility or in a facility determined to be comparable by verifiable evidence to the US standard of acute and critical care nursing practice.
The critical care departments consist of ICN (intensive care neonatal), PICU (pediatric intensive care unit), CTSU (cardiac thoracic surgical unit - open-heart surgery), NICU (neurological intensive care unity), SICU (surgical intensive care unit), MICU (medical intensive care unit) and CCU (cardiac care unit). There is a mentoring program for new RN graduates for ICU floors and the emergency department. New nurses get four months with a mentor from the hospital unless they come with ICU experience. If they come with experience, the mentoring time ranges from 6-12 weeks. The mentoring program is based on a competency-based orientation based on the ACCN’s (Association of Critical Care Nursing, 2007) model and refined to the hospitals’ specific unit needs. Nurses are not required to take continuing education courses for licensure but are encouraged to take continuing education courses that are specific to nursing, credentialed and offered through the hospital’s staff development department.

The hospital where the sample was drawn is a network of medical centers, ambulatory care centers, outpatient facilities and other health resources serving the health care needs of the entire region. The hospital is a 752-bed private, not-for-profit health care system currently operating two full-service acute care hospitals. The hospital has continued to maintain its mission of treating everyone, regardless of the ability to pay.

The hospital received re-accreditation by The Joint Commission on the Accreditation of Health Care Facilities, earning a cumulative score of 96 out of 100 (to ensure anonymity only general and publicly reported information is provided). The hospital achieved an outstanding patient satisfaction rating of 95% or higher for inpatient customer satisfaction. The association of critical care nurses (ACCN) in 2001 reported that 90% of critical care certification nurses in the United States were female and 10% male and that the mean age was 37. The demographics of the critical care nurses at the hospital used in the present study was very similar to the demographics
described for the United States with regard to age and gender. The percentage of critical care nurses in the hospital for the present study that are female was 90% and the mean age was 39. This similarity in populations adds confidence to making inferences to other critical care nursing populations on these three variables.

**Description of Instruments**

This section provides detailed information about the three instruments used in the present study and includes a general description of previously published reliability and validity reports. Information regarding how suitable the instruments are is summarized in a table in each section and is also outlined in chapter two. In general, survey design was chosen for this study because of its advantages such as the economy of the design and the rapid turnaround in data collection (Babbie, 1990). Each instrument was chosen based on acceptable reliability and validity reports and on how well the dimensions related to the research questions and the critical care nursing context.

Sufficient evidence to support the validity and reliability of the measures used in the present study includes findings completed and published by the researchers who initially developed each scale. All of the scales proposed in the present study have undergone previous psychometric evaluations but were further tested for content validity by using expert reviewers. In addition, construct validity was established using factor analysis and internal reliability was reported using Cronbach’s alpha.

The three established scales are the Environmental Empowerment Scale (Randolph & Blanchard, 1997), The Psychological Empowerment Scale (Spreitzer, 1995), and the Psychological Strain Scale (Osipow, 2001). Each instrument used to identify and obtain items and scales is described separately with a general description and information regarding validity.
and reliability information for each. Once the data was collected a factor analysis was conducted to provide information on the construct validity of the environmental empowerment dimension within the specific population used for this study.

**Psychological Empowerment Scale**

This section provides information about the psychological empowerment scale. Reliability and validity information is provided as well as demographic information.

**Validity and Reliability of Psychological Empowerment Scale**

The Psychological Empowerment Scale developed by Gretchen Spreitzer in 1997 has been used in more than 50 studies and it is estimated that one-fourth of these were in health care. This scale measures the four dimensions of psychological empowerment which are impact, meaning, self-determination and competence as originally defined by Thomas & Velthouse (1990). The first dimension is Meaning, which is the value of a work goal or purpose judged in relation to an individuals own ideals or standards (Thomas & Velthouse, 1997). Impact is the degree to which an individual can influence strategy, administration, or operating outcomes at work (Ashforth, 1989). Self-determination is an individual’s sense of having a choice in initiating and regulating actions (Deci, Connell, & Ryan, 1989). Finally, competence is an individual’s belief in his/her capability to perform activities with skill (Gist, 1987). See Appendix C for a copy of the Psychological Empowerment scale. Permission to use the scale is in Appendix J. Table 3.1 provides the dimension definitions, item examples for each dimension, how the scores are totaled, and previously published reliability (alpha) measures.

The Psychological Empowerment scale is a 12-item scale used to measure individual perceptions of empowerment based on four dimensions. In previous research, the rating scale ranged from 1, “strongly disagree”, to 7, “strongly agree”. The items used to make up the
dimension for meaning were taken directly from (Tymon & Thomas, 1994). The competence items were adapted from Jones’s (1986) self-efficacy scale. The self-determination items were adapted from Hackman and Oldham’s (1985) autonomy scale, and the impact items were adapted from Ashforth & Lee (1991) helplessness scale.

Spreitzer (1995) clearly outlined a set of assumptions that are important for the present study. First, empowerment is not an enduring personality trait generalizable across situations, but rather, a set of cognitions shaped by a work environment. Second, empowerment is a continuous variable; people can be viewed as more or less empowered, rather than empowered or not empowered. Third, empowerment is not a global construct generalizable across different life situations and roles but rather, specific to the work domain.

*Demographic Information for the Original Development of the Psychological Empowerment Scale*

Spreitzer (1995) used two separate samples to test for validity and reliability. The primary and initial sample that Spreitzer (1995) used to test her scale for reliability and validity consisted of 393 managers randomly selected from various work units representing all functions, divisions, and geographic locations of an industrial company. Ninety-three percent were men and 85% were white; the mean age was 46 years and mean company and position tenures were 13 and 3 years, respectively. Seventy percent of these managers had at least a college education. A second sample, composed of lower-level employees from an insurance company, was used to cross-validate the results of the measurement model. The second sample included 128 employees that were different from the primary sample. These employees were largely nonmanagers (83%), women (84%), and high school graduates (54%) with a mean age of 40 years and average company tenure of 15 years.
**Table 3.1**

*Information for the Psychological Empowerment Scale*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Scoring</th>
<th>Example Questions</th>
<th>Previous Alpha’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological Empowerment</td>
<td>Psychological empowerment is defined as an individual’s experience of intrinsic motivation that is based on cognitions about him/her in relation to his or her work role (Spreitzer, 1995).</td>
<td>Scale totals range from 12-64.</td>
<td>N/A</td>
<td>.72 for overall scale (Spreitzer, 1995); .87-.92 for overall scale (Spreitzer, 1997); .85-.91 (Laschinger, 2004).</td>
</tr>
<tr>
<td>Meaning</td>
<td>The value of a work goal or purpose, judged in relation to an individual’s own ideals or standards (Thomas &amp; Velthouse, 1997)</td>
<td>3 Likert scaled questions from the rating with range from 1 (strongly disagree to 7 strongly agree). Sum of items range 3-21</td>
<td>The work I do is important to me</td>
<td>.85 (Spreitzer, 1997); .81 (Kraimer, Liden &amp; Seibert, 2004)</td>
</tr>
<tr>
<td>Impact</td>
<td>The degree to which an individual can influence strategy, administration or operating outcomes at work (Ashforth, 1989)</td>
<td>3 Likert scaled questions from the rating with range from 1 (strongly disagree to 7 strongly agree). Sum of items range 3-21</td>
<td>My impact on what happens in my department is large</td>
<td>.85 (Spreitzer, 1997); .83 (Kraimer, Liden &amp; Seibert, 1999) .92 (Laschinger, 2004) Test-retest .68</td>
</tr>
<tr>
<td>Self-Determination</td>
<td>An individual’s sense of having choice in initiating and regulating actions (Deci, Connell, &amp; Ryan, 1989).</td>
<td>3 Likert scaled questions from the rating with range from 1 (strongly disagree to 7 strongly agree). Sum of items range 3-21</td>
<td>I have significant autonomy in determining how I do my job</td>
<td>.80 (Spreitzer, 1997); .85 (Kraimer, Liden &amp; Seibert, 1999); .86 (Laschinger, 2004) Test-retest .74</td>
</tr>
<tr>
<td>Competence</td>
<td>An individual’s belief in his/her capability to perform activities with skill (Gist, 1987).</td>
<td>3 Likert scaled questions from the rating with range from 1 (strongly disagree to 7 strongly agree). Sum of items range 3-21</td>
<td>I am confident about my ability to do my job</td>
<td>.84 (Spreitzer, 1997); .76 (Kraimer, Liden &amp; Seibert, 1999); .85 (Laschinger, 2004) Test-retest .58</td>
</tr>
</tbody>
</table>

Total score from 12-64
Reliability and Validity of Psychological Empowerment Scale

The existing validity data on the measures researched and reported by Spreitzer (1995) and other researchers are excellent. Kraimer, Seibert, and Liden conducted second order confirmatory factor analyses in 1999 with the two complementary samples that provided substantial support for the convergent and discriminate validity of Spreitzer’s (1995) scale. Second-order CFA’s were used to assess the convergent and discriminant validity of the empowerment measures in both samples using LISREL. The criteria used to assess the fit of each LISREL analysis was as follows: the adjusted goodness-of-fit index (AGFI), which is independent of sample size and relatively robust against departures from normality should meet or exceed the 0.9 rule (Hatcher, 1994). Second, the root-mean-square residual (RMSR), an estimate of the average magnitude of the fitted residuals, should be less than 0.05. Finally, the noncentralized normed fit index (NCNF) which compares the hypothesized model to a null model, should meet or exceed a 0.0 threshold. In the Industrial sample, an excellent fit was obtained (AGFI=.93, RMSR=.04, NCNFI=.97). A modest fit was obtained for the Insurance sample (indicated as the letter b) (AGFI=.87, RMSR=.07, NCNFI=.98). Each of the items loaded strongly on the appropriate factor and the four factors significantly correlated with each other in both samples (reference). The measure provides evidence for the construct validity of a nomological network of empowerment in the workplace. The measurement model suggests that each of the four factors contributes to an overall construct of empowerment in a second-order factor analysis and that the dimensions are not construct-equivalent. The instrument upheld it’s factor structure. The results of two separate factor analysis are illustrated in figure 3 and figure 3.1.
Figure 3. Results of Second-Order Confirmatory Factor Analysis for Psychological Empowerment. For industrial sample, AGFI=.93, RMSR=.04, NCNFI=.91 (excellent fit). For insurance sample (b) ADFI=.87, RMSR=.07, NCNFI=.98 (moderate fit) (Adapted from Spreitzer, 1995). Coefficients from the completely standardized solution are reported.

Ya= industrial Yb= insurance sample.

Psychological Empowerment

Meaning
a) .87 .76 .78
b) .61 .70 .82

Competence
a) .62 .84 .71
b) .68 .75 .73

Impact
a) .75 .72 .61
b) .88 .86 .54

Self-Determination
a) .60 .64 .69
b) .68 .86 na

Figure 3.1 Results of Second-Order Confirmatory Factor Analysis Time one (a) and Time two (b) (Kraimer, Seibert, Liden, 1999). Note. Coefficients from the completely standardized solution are reported. Coefficients from Time 1 (N=175) are written above the coefficients from Time 2 (N=113). Ya= industrial Yb= insurance sample. Overall fit statistics were the same for both Time 1 and Time 2. AFFI=.83, CFI=.93.
Reliability of Psychological Empowerment Measures used in Present Study

Cronbach’s alpha is a widely accepted test of reliability and Spreitzer (1995) reports the alpha measures of each dimension generally fell above .70 therefore; reliability of measures are acceptable. She studied two separate samples, one with a sample from an industrial company and another with a sample from an insurance company. Table 3.2 gives univariate statistics, reliabilities, and correlations among the empowerment items for the industrial organization and Table 3.3 gives those statistics for the insurance sample. In general, the respondents reported a fairly strong sense of empowerment, and despite significant correlations between items from different dimensions of the scale, the highest correlations were between items measured the same dimension. The measure attained acceptable reliability in both samples. The Cronbach’s alpha reliability for the overall empowerment construct was .78 for the industrial sample and .62 for the insurance sample.
Table 3.2

Univariate Statistics and Pearson Correlation among Empowerment Items, Industrial Sample for Psychological Empowerment (from Spreitzer, 1995).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Meaning 1</td>
<td>5.97</td>
<td>0.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Meaning 2</td>
<td>5.79</td>
<td>0.90</td>
<td>.66*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Meaning 3</td>
<td>5.90</td>
<td>0.87</td>
<td>.66*</td>
<td>.76*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Competence 1</td>
<td>5.37</td>
<td>1.14</td>
<td>.30*</td>
<td>.22*</td>
<td>.32*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Competence 2</td>
<td>5.61</td>
<td>0.93</td>
<td>.30*</td>
<td>.31*</td>
<td>.36*</td>
<td>.68*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Competence 3</td>
<td>6.08</td>
<td>0.87</td>
<td>.11</td>
<td>.15</td>
<td>.20*</td>
<td>.52*</td>
<td>.59*</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>7. Self-determination 1</td>
<td>5.44</td>
<td>1.03</td>
<td>.22*</td>
<td>.29*</td>
<td>.29*</td>
<td>.23*</td>
<td>.33*</td>
<td>.21*</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>8. Self-determination 2</td>
<td>5.50</td>
<td>1.01</td>
<td>.22*</td>
<td>.29*</td>
<td>.34*</td>
<td>.27*</td>
<td>.36*</td>
<td>.33*</td>
<td>.54*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Impact 1</td>
<td>5.33</td>
<td>1.06</td>
<td>.32*</td>
<td>.38*</td>
<td>.33*</td>
<td>.23*</td>
<td>.28*</td>
<td>.17*</td>
<td>.31*</td>
<td>.31*</td>
<td>.39*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Impact 2</td>
<td>5.55</td>
<td>1.03</td>
<td>.32*</td>
<td>.42*</td>
<td>.43*</td>
<td>.21*</td>
<td>.24*</td>
<td>.19*</td>
<td>.42*</td>
<td>.42*</td>
<td>.41*</td>
<td>.61*</td>
<td></td>
</tr>
<tr>
<td>11. Impact 3</td>
<td>5.69</td>
<td>0.96</td>
<td>.29*</td>
<td>.35*</td>
<td>.39*</td>
<td>.23*</td>
<td>.30*</td>
<td>.19*</td>
<td>.40*</td>
<td>.40*</td>
<td>.45*</td>
<td>.66*</td>
<td>.78*</td>
</tr>
</tbody>
</table>

Note. Significance: r’s>.10, p.<.05; r’s>.13, p.<.01; r’s>.17, *p.<.001
Table 3.3

Univariate Statistics and Pearson Correlations Among Empowerment Items, Insurance Sample For Psychological Empowerment (from Spreitzer, 1997).

| Variables  | Mean | SD   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|------------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1. Meaning | 6.09 | 0.74 |     |     |     |     |     |     |     |     |     |     |     |
| 2. Meaning | 5.61 | 0.98 | .57*|     |     |     |     |     |     |     |     |     |     |
| 3. Meaning | 5.90 | 0.84 | .67*| .76*|     |     |     |     |     |     |     |     |     |
| 4. Competence1 | 46.24 | 0.70 | .34*| .38*| .31*|     |     |     |     |     |     |     |     |
| 5. Competence2 | 6.04 | 0.73 | .33*| .36*| .30*| .86*|     |     |     |     |     |     |     |
| 6. Competence3 | 5.88 | 0.94 | .27*| .28*| .30*| .24*| .53*|     |     |     |     |     |     |
| 7. Self–det1 | 5.36 | 1.16 | .14 | .22*| .24*| .17*| .19*| .16*|     |     |     |     |     |
| 8. Self-det2 | 5.41 | 1.22 | .08 | .37*| .30*| .24*| .29*| .13 | .64*|     |     |     |     |
| 9. Impact 1  | 4.71 | 1.48 | .22*| .23*| .38*| .20*| .15 | .02 | .33*| .31*|     |     |     |
| 10. Impact 2 | 3.27 | 1.51 | .26*| .18*| .34*| .13 | .10 | -.08| .21*| .24*| .65*|     |     |
| 11. Impact 3 | 3.41 | 1.51 | .30*| .32*| .41*| .26*| .22*| .09 | .28*| .29*| .68*| .62*|     |

Note. Significance: *p<.001
The two data collections for the insurance sample permitted the assessment of test-retest reliability as well. Table 4.1 gives univariate statistics and correlations for the test-retest relationships among the empowerment scales and the other variables; these suggest moderate stability over time. Thus, both internal consistency and the test-retest reliability are established for the empowerment scale items.

The insurance sample provided these Cronbach’s alpha’s in Table 3.4 for the four dimensions as follows: Meaning (.85) (.85), Competence (.84) (.83), Self-determination (.80) (.79) and Impact (.85) (.84). Test retest-reliability was shown to be strong. Test-retest reliability is assessed by administering the same instrument to the same sample of subjects at two points in time, and computing the correlation between the two sets of scores. The measures have consistently attained excellent reliability in all samples. Internal consistency reliability is examined by coefficient alpha. The Cronbach’s alpha reliability coefficient for the overall empowerment construct was .72 in the initial samples and has been consistently above .70 in subsequent studies (Spreitzer, 1997).
Table 3.4

*Univariate Statistics and Pearson Correlations Among Scales, Insurance Sample, Times 1 and 2 (Spreitzer, 1997).*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Meaning Scale time 1</td>
<td>6.13</td>
<td>0.71</td>
<td>(.85)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Competence scale, time 1</td>
<td>6.12</td>
<td>0.61</td>
<td>.48</td>
<td>(.84)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Self-extinction scale, time 1</td>
<td>5.70</td>
<td>0.87</td>
<td>.62*</td>
<td>.54*</td>
<td>(.80)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Impact scale, time 1</td>
<td>4.28</td>
<td>1.51</td>
<td>.42</td>
<td>.21</td>
<td>.42</td>
<td>(.85)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Meaning scale, time 2</td>
<td>5.94</td>
<td>0.76</td>
<td>.72*</td>
<td>.42</td>
<td>.43</td>
<td>.36</td>
<td>(.85)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Competence scale, time 2</td>
<td>6.02</td>
<td>0.88</td>
<td>.37</td>
<td>.58*</td>
<td>.32</td>
<td>.24</td>
<td>.53*</td>
<td>(.83)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Self-determination scale, time 2</td>
<td>5.26</td>
<td>1.12</td>
<td>.39</td>
<td>.34</td>
<td>.74*</td>
<td>.38</td>
<td>.43</td>
<td>.32</td>
<td>(.79)</td>
<td></td>
</tr>
<tr>
<td>8. Impact scale, time 2</td>
<td>4.11</td>
<td>1.32</td>
<td>.23</td>
<td>.02</td>
<td>.23</td>
<td>.68*</td>
<td>.40</td>
<td>.24</td>
<td>.33</td>
<td>(.84)</td>
</tr>
</tbody>
</table>

Note. Cronbach’s alpha reliabilities are provided in parentheses. Significance: p<.001*. 
Recently, Kraimer, Seibert & Liden (1999) examined the construct validity of scores on Spreitzer’s Psychological Empowerment Scale with nurses. Confirmatory factor analysis of data from a sample of 160 nurses showed substantial support for Spreitzer’s four empowerment dimensions: meaning, competence, self-determination, and impact. In addition, results from structural equation modeling demonstrated job characteristics to be related differentially to the empowerment dimensions, providing evidence for both convergent and discriminant validity of scores on the four empowerment dimensions. This scale was an easy choice based on its strong acceptance in the literature and repetitive use in a variety of settings including healthcare. Validity and reliability tests were good when it was first designed and have been consistently acceptable in subsequent settings including in nursing (Laschinger, 2004). Additionally, Spreitzer (1995) considers Randolph and Blanchard’s (1997) environmental empowerment scale to be a good complement to psychological empowerment because they were found to be related but distinct (Spreitzer, 1995, Thomas & Velthouse, 1990; Randolph, Seibert & Silver, 2004).

The repetitive use of these measures in nursing settings where validity and reliability estimates continued to be adequate supports the use of the scales in the present study. In summary, Spreitzer reports that both internal consistency and the test-retest reliability are established for the empowerment scale items (Spreitzer, 1997) and continue to provide good results.
Environmental Empowerment Scale

This section will provide information regarding the environmental empowerment scale. This information will include reliability and validity information as well as demographic information.

Reliability and Validity of the Environmental Empowerment Scale

The Environmental Empowerment Scale was developed in 1997 by Randolph and Blanchard consisting of 30 Likert-type items designed to reflect the three dimensions of empowerment. These dimensions are defined as: team accountability; the perception that teams are the locus of decision-making authority and performance accountability in organizations. Information sharing is providing sensitive information on costs, productivity, quality, and financial performance to employees throughout an organization. Clear structures is organization structures and practices that encourage autonomous action. This may include the development of a clear vision and clarity regarding goals, work procedures and areas of responsibility. Please refer to the environmental empowerment section in chapter two for related theories that helped support the dimensions used for this scale. A copy of this scale can be found in Appendix D. Table 3.5 provides information about the Environmental Empowerment Scale including the dimension definitions, how the scale is rated, example items, how the scores are totaled and Cronbach’s alpha results from previous research.
Table 3.5  
*Information for the Environmental Empowerment Scale*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Scoring</th>
<th>Example Questions</th>
<th>Alpha’s of previous measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental Empowerment</strong></td>
<td>Environmental empowerment is based on Randolph and Blanchard’s (1995) theory as a set of shared perceptions regarding the workplace.</td>
<td>Subscale total score range from 30-210.</td>
<td>Higher scores mean higher empowerment.</td>
<td>Cronbach’s α.98 (Randolph, Seibert &amp; Silver, 2004)</td>
</tr>
<tr>
<td><strong>Team Accountability</strong></td>
<td>The perception that teams are the locus of decision-making authority and performance accountability in organizations.</td>
<td>10 items per subscale items measure from 1 (almost never) to 7 (almost always). Dimension totals from 10-70.</td>
<td>We use teams as the focal point of responsibility and accountability in our organization</td>
<td></td>
</tr>
<tr>
<td><strong>Information Sharing</strong></td>
<td>In values providing sensitive information on costs, productivity, quality, and financial performance to employee’s throughout an organization,</td>
<td>10 items per subscale items measure from 1 (almost never) to 7 (almost always). Dimension totals from 10-70.</td>
<td>People in our organization get information about the organization’s performance to employee’s in a timely fashion</td>
<td></td>
</tr>
<tr>
<td><strong>Clear Structures</strong></td>
<td>Organization structures and practices that encourage autonomous action including the development of a clear vision and clarity regarding goals, work procedures and areas of responsibility.</td>
<td>10 items per subscale items measure from 1 (almost never) to 7 (almost always). Dimension totals from 10-70.</td>
<td>We create structures and procedures that encourage and expect people to take initiative in improving organizational performance</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total scale scores range from 30-210</td>
<td></td>
</tr>
</tbody>
</table>
Each dimension is rated from 1-7, “almost never” to “almost always”. Each of the three dimensions can have a score that ranges from 10-70 with cumulative totals for the sum of all three ranging from 30-180. The Blanchard Company gave written approval to use the scale in this study, see Appendix K. The measure, based on scales adapted from previous research, provides evidence for the construct validity of a homological network of empowerment in the workplace.

**Demographic Information of the Original Development of the Environmental Empowerment Scale**

The initial test of validity and reliability of the Environmental Empowerment Scale was completed by researchers Randolph, Seibert and Silver (2004) from a sample from 375 employees in one division of a Fortune 100 manufacturer of high-technology office and printing equipment. The employees were electrical, mechanical, and systems design engineers organized into 50 project teams involved in design engineering for a family of new products. Respondents completed surveys that assessed their perceptions of environmental empowerment, psychological empowerment, and job satisfaction. The average age of the members of the final sample was 39.6 years, and these respondents had been employed by the organization for an average of 14.8 years and seventy-seven percent of the sample members were male. Twenty-one percent had an associate’s degree, forty-three percent, a bachelor’s degree, 24.4 percent, a master’s degree; and 2 percent, a Ph.D.

**Validity of Environmental Empowerment Scale**

Randolph, Seibert & Silver (1997) performed confirmatory factor analysis to establish validity data. When used in combination with the psychological empowerment scale, each of the
30 items from the environment empowerment scale was specified to load only onto its expected first-order construct (information sharing, clear structures and team accountability), and each of the twelve items from the psychological empowerment scale was specified to load only onto its expected first-order construct (meaning, competence, self-determination or impact). The fit that was obtained for the model was acceptable (RMSEA=.07, SRMR=.07, CFI=.98). All items loaded significantly onto their first-order constructs, and all first-order constructs loaded significantly onto their respective second-order constructs. Factor analysis was completed on this instrument for the present study and can be found in the results section on page 158.

**Reliability of Environmental Empowerment Scale**

The Environmental Empowerment Scale was assessed for reliability with coefficient alpha, which reflects how well the different items complement each other in their measurement of different aspects of the same variable (homogeneity) (Cronbach, 1951). Coefficient alpha was computed for an aggregated score for all 30 items. Coefficient alpha was calculated on these aggregated scores and was .98.

**The Psychological Strain Scale**

This section will provide information about the psychological strain scale. This will include information about the validity and reliability of the scale as well as demographic information.

The Occupational Stress Inventory (OSI-R) was designed to measure Occupational Roles, Psychological Strain, and Employees Personal Resources for coping with strain in the workplace. This study only used the items designed to measure psychological strain. The OSI-R was developed for two primary reasons. The first was to develop generic measures of occupational stressors that would apply across different occupational levels and environments.
The second reason was to provide measures of psychological strain experienced by individuals because of work stressors. This is a continuous scale with 10 questions on a Likert-type scale with totals ranging from 10-50 with scores ranging from 1 – rarely to 5 – most of the time. A copy of this scale can be found in Appendix E. Table 3.6 provides information regarding the psychological strain scale including the dimension definitions, the number of questions and range of scale rating, example questions, how the scores are totaled and alpha’s from previous research.

Psychological strain was the scale used for the present study and it reflects strain in affective, subjective responses of various types. Examples include anxiety, depression, and lethargy. Interpersonal and behavioral strain symptoms include withdrawal, isolation, anger, and irritability. The scale has been used in a variety of work environments where 75% were classified as belonging to the executive, and public service occupations (Osipow, 2003).

This construct was particularly well suited for the present study because it measures strain as clinical symptoms that research has shown to be associated with poor performance in critical care nursing (Hass, 2005). The OSI was also chosen because it clearly delineates the symptoms of strain while most other strain scales are actually examining the stressors that are in the work environment. Strain research suggests that depression, anxiety and psychological distress elevated in individuals working in high strain jobs (Derogotis, 2001). Therefore, these symptoms are used as indicators of high strain in a nursing setting. Because the present study is ultimately concerned with the job performance of critical care nurses who are under strain, it is necessary to have a scale that measures symptoms found to be most frequently associated with poor performance. Osipow’s study (2001) was the best fit because it had sources of strain and the symptoms clearly delineated. Other stress and strain scales such as those developed by Derogatis
(1966) were older, not well studied, and examined the stressors in the environment rather than
the symptoms (strain).

**Demographic Data for the Original Development of the OSI-R**

Normative data for the OSI-R was provided in order to help make comparisons to other
populations where it will be used. The normative data was derived from a sample of 983
participants and collected at a variety of sites and included data regarding age, gender, ethnic
group, marital status, educational level, and occupation. The mean age of the respondents was
36.3 years. The normative sample was 63% male, and married respondents comprised 53% of
the sample. Although 85% of the sample was Caucasian, almost 15% of the respondents were in
the African American, Hispanic, Asian, or Native American groups. The sample is weighted
toward higher educational levels, but considerable effort was made to obtain an adequate sample
of high school graduates and individuals with less than a 12-th grade education. Occupations
represented a wide variety of work settings, ranging from scientist/professional to
laborer/maintenance worker. To reflect the occupational groups defined by the Bureau of Labor
Statistics (1996), each participant’s occupation was re-categorized. The distribution of the
executive, professional, technical, and administrative support occupational groups was similar
between the normative sample and the 1996 census data (Osipow, 2001).

**Validity of the Psychological Strain Scale**

Multiple studies evaluated the original strain measurement’s psychometric properties and
reported acceptable validity data (Osipow, 2003). In previous research each of the three
questionnaires of the OSI-R was separately subjected to a maximum likelihood factor analysis
with varimax rotations. Only 20% of the items were changed in the revised edition from the
original to create the revised edition (Osipow, 2003). The two OSI versions were also compared
on a sample of 45 highway patrol cadets using both the OSI and OSI-R (Elam, 1997). The resulting correlations reflect considerable agreement between the two forms. Each of the 17 correlation coefficients was equal to or greater than .63 and all were statistically significant. Three correlations were in the .60 to .69 range, 10 in the .70 to .79 range, 3 in the .80 to .89 range and 1 in the .90 or above range (Osipow, 2000). This suggested that the two versions are similar enough to generalize validity from the original OSI to the OSI-R.

Convergent validity studies further confirm correlations between domains and dimensions of the OSI-R with other reputable scales. Guetter (1997) validated the OSI-R by the finding that it correlates significantly with Employee Assistance Program Inventory (EAP) (Anton & Reed, 1994). Of particular relevance is that the Psychological Strain (PSY) scale was validated by the finding that it correlates significantly with Anxiety (AN) and Depression (DP) scales in the EAPI (Anton & Reed, 1994). Given that convergent and discriminate validity were completed in the development of the instrument and in the subsequent research as described previously, further tests of validity were not completed again for the present study.

**Reliability of Psychological Strain Scale**

Reliability estimates for the strain scale were conducted in two ways. First Lombard (1997) analyzed test-retest reliability data by administering the OSI-R to a sample of 62 air force cadets over a two-week period. Correlations among the total questionnaire scores and the 14 individual scales of the subsections were provided and all fell above .70.

The second reliability estimate used was an internal consistency analysis with the normative sample. A summary of the alpha coefficients is in Table 3.6. Coefficients for the OSI-R are comparable to those for the original OSI. Coefficients ranged from .70-.89. Intercorrelations among the total questionnaire scores and the 14 scales aligned as expected with the underlying
theory of the instruments. These correlations also suggest that each scale is important to the overall instrument construct and are found in Table 3.7.
### Table 3.6

*Information for the Psychological Strain Scale*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Scoring</th>
<th>Example Question</th>
<th>Previous Alpha’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable:</td>
<td>Psychological strain is defined by measurement of symptoms of anxiety, depression and somatic symptoms.</td>
<td>10 items total. One subscale used with range of responses from 1 (rarely) to 5 (most of the time) Score totals range from 10-50</td>
<td>I am easily irritated</td>
<td>Cronbach’s Alpha ranges from .70- .86 (Osipow, 1997).</td>
</tr>
</tbody>
</table>
### Table 3.7

*Alpha Coefficients for the Occupational Stress Inventory (OSI) and the Occupational Stress Inventory-Revised (OSI-R) Scales (Osipow, 2002) based on research in the initial stages of scale development.*

<table>
<thead>
<tr>
<th>Scale</th>
<th>No. of Items</th>
<th>OSI</th>
<th>OSI-R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Strain Questionnaire (PSQ)</td>
<td>40</td>
<td>.94</td>
<td>.93</td>
</tr>
<tr>
<td>Vocation Strain (VS)</td>
<td>10</td>
<td>.71</td>
<td>.75</td>
</tr>
<tr>
<td>Psychological Strain (PSY)</td>
<td>10</td>
<td>.89</td>
<td>.86</td>
</tr>
<tr>
<td>Interpersonal Strain (IS)</td>
<td>10</td>
<td>.81</td>
<td>.75</td>
</tr>
<tr>
<td>Physical Strain (PHS)</td>
<td>10</td>
<td>.87</td>
<td>.85</td>
</tr>
</tbody>
</table>
Confidentiality

Confidentiality was maintained by allowing participants to anonymously complete and return the surveys to my home address. I ensured that no un-authorized persons have access to the information. There were no assistants helping me with the study and all data remained in my home until the data was destroyed in a shredder.

No personal identification was be connected to the survey and therefore no one knew who did or did not complete the survey. Each survey was be numbered so that no identifying information was be included on the survey (for tracking purposes). I used a detachable section of the questionnaire with a closely guarded pre-printed code.

While the hospital contact person is aware of the study and knows whom the critical care nurses are, she did not have knowledge of who participated and who did not. Additionally, the data was not be broken into departments, which could then identify participants.

Once the data was recorded, the actual survey was destroyed immediately. I will not know the identity of any participants who complete the study. Once the primary data collection period is complete, I may take a small random sample from non-participants to survey, therefore knowing the identity at the point of sending the survey but I did not know the identity of those that responded. NC State approved this in the spring of 2006 and by the hospital in August of 2005.
Data Collection Procedures

The subject participating hospital provided the list of all the critical care nurses on the critical care units to survey. My contact person notified nurse managers that I would attend their next mandatory meeting to present the study and its purpose. I met with individual managers of the units and attended meetings. This provided the opportunity to describe the study and its significance, and to explain confidentiality. Copies of the confidentiality note (appendix A) and the informed consent (appendix H) were offered. The confidentiality note explained confidentiality as outlined previously with particular emphasis that their names would not be included on their survey, that no hospital staff would know who participated and that the study was voluntary.

After meeting with managers, I e-mailed each participant before meeting with all the staff or sending the questionnaire. Email addresses followed a first and last name sequence so they did not have to be obtained by staff. In that e-mail I identified myself, discussed the purpose of the study, encouraged cooperation and explained how confidentiality would be maintained (Appendix F).

I then met with all the 350 critical care nurses at a series of staff meetings over a few weeks time period including early mornings and weekends. As with the managers, I described the study and its significance, explained confidentiality and offered copies of the confidentiality note (appendix A) and the consent to participate (appendix H). I reminded them that their participation was completely voluntary, and that no hospital staff would know who participated. I gave them my contact information for any other questions that may arise.
Two weeks after the initial email letter, I mailed the survey to each nurse at work. I sent a second survey two weeks after the first mailing. Finally, I sent a reminder email (see appendix I) to all members of the sample approximately a week after the second mailing. There were 350 critical care nurses that received a copy of the survey and 120 surveys were returned. A copy of the initial survey letter can be found in appendix G as well as the consent to participate in appendix H. The completed surveys were sent to a post office box number in Raleigh and participants used a self-addressed stamped envelope that was provided.

**Data Analysis**

Descriptive statistics were reported in sufficient detail in order to help make comparisons to other populations where it may be used in future research and to ensure that this population was similar to other critical care nursing environments to where other future research comparison may be made. Statistics were provided about age, gender, part-time or full-time status, number of years on the same critical care nursing unit, position (management or not), critical care specialty, and total number of years working in critical care nursing environments. Most research suggests that there are no differences in the main variables in terms of these primary demographic variables (Spreitzer, Kizilos & Nason, 1997; Almost & Laschinger, 2002; Kraimer, Seibert & Liden, 1999; Laschinger, Boudrias & Gaudreau 2005; Kanter, 2001; Laschinger, Finegan, Shamian & Wilk, 2004) number of years working in the same critical care work environment (Laschinger, Finegan, and Shamian & Wilk, 2004). Since these demographic variables have not been found in the literature to suggest that they influence the major study variables, they were not be included as factors in the analysis and only used for descriptive purposes.
Descriptive statistics of the scales were also provided. Tables include scale statistics for the mean score, the range, standard deviation, alphas and number of items and correlations to highlight correlations among the psychological empowerment items and the environmental empowerment items and among the three constructs. These statistics were computed with SAS V8 output using a number of programs this software offers. Details of the statistical procedures for each research question are provided in the following sections.

**Question #1**

Do nurses who perceive high environmental empowerment and high psychological empowerment report less psychological strain than nurses who perceive low environmental empowerment and low psychological empowerment? (means, standard deviations, t-tests and if significant, Cohen’s $d$ for magnitude of effect)?

To test this hypothesis, nurses were divided into two groups based on their scores on empowerment by manipulating the empowerment variables to be High/Low nominal variables. Nurses with a score of (more than) one standard deviation above the mean were considered as having high empowerment and nurses with a score of (more than) one standard deviation below the mean as having low empowerment. Then scores of the two groups (those with both high environmental and psychological empowerment scores vs. those with both low environmental and psychological empowerment scores) were compared for differences of mean on psychological strain.

Independent t-tests were performed as a way to determine if there was a significant difference between the means of the two groups. This analysis began with the null hypothesis that, in the population, there is no difference between the low and high empowerment groups with respect to their variances on the strain variable ($H=0$; no difference). The SAS V8 output
provided two t-test results, the “unequal” are the approximate t statistic, which is based on the assumption that the variances in the two samples are not equal. The second t statistic “Equal” is the standard t statistic, which is based on the assumption that the variances are equal.

The t-test procedure in SAS V8 automatically performed a folded F statistic that tested the equality of the variances in the two samples. It computed a special F test to test this hypothesis. If the p value for the resulting F tests is less than .05, the null hypothesis of no differences is rejected. The conclusion is that the variances are unequal and the p value is small (p<.05) so the hypothesis is rejected. This suggested a difference and indicated a next step to test the magnitude of the difference with Cohen’s D. This was computed with the effect size calculator (Google effect size). A Cohen’s D output near zero indicated that 50% scored high and 50% scored Low (little difference).

*Question #2*

Question #2 What is the predictive power of psychological empowerment (meaning, impact, competence, determination) and environmental empowerment (Factor 1 – clear structures and team accountability; Factor 2 – information sharing). on psychological strain of critical care nurses?

The statistical analysis chosen for this research question was multiple regressions. The most common multiple regression analysis involved a single continuous criterion variable measured on an interval or ratio scale, and multiple continuous predictor variables also assessed on an interval or ratio scale. The variables in this study all meet those requirements as they were measured on interval or ratio scales. Ultimately multiple regression analysis answered whether the linear combination of predictor variables accounted for a statistically significant amount of variance in the criterion, as well as whether this combination of predictors accounted for a
relatively large amount of variance in the criterion. A correlation matrix was provided to display correlations and the possibilities for some variable to be multicolinear.

In the present study, multiple regressions answered whether there is a significant relationship between psychological strain and the multiple predictor variables from both environmental and psychological empowerment. It also answered whether the multiple regression coefficients for each dimension of the empowerment constructs were statistically significant and whether a given predictor accounted for a significant amount of variance on the criterion (this coefficient represents the amount of weight given to a specific predictor while holding others constant). Multiple regressions is also particularly well suited for studying the relationship between naturally occurring predictor and criterion variables that are not manipulated by the researcher, but rather are simply measured as they naturally occur (Hatcher & Stepanski, 1994).

In SAS V8, the PROC REG procedure estimated multiple regression coefficients for the various predictors, calculated R2, and tested it for significance. R2 indicated the percent of variance in the criterion variable that is accounted for by the linear combination of predictor variables. The intercept estimate, along with the nonstandardized multiple regression coefficients for the predictors were reviewed although these coefficients alone were not used to assess the relative importance of the predictor variables. The review of the significance of the regression coefficients involves t tests that test the null hypothesis that the regression is equal to zero. P-values less than .05 were considered evidence to reject the null hypothesis. When given coefficients were statistically significant, it was considered evidence that the corresponding predictor variable was a relatively important predictor of the criterion.

Finally, the standardized regression coefficients (beta weights) were reviewed. Nonstandardized regression coefficients often tell very little about which variables are relatively
important predictors. This is because the different predictors normally have different standard
deviations, and these differences affect the size of the nonstandardized coefficients. To avoid this
difficulty, it was necessary to instead review the standardized multiple regression coefficients,
which are also called beta weights. Beta weights are the regression coefficients that would be
obtained if all the variables were standardized, so that they had the same standard deviations. It is
therefore more appropriate to review the beta weights when you wish to compare the relative
importance of predictor variables.

A thorough approach included understanding the relative importance of predictor variables
by reviewing additional sources such as bivariate correlations and uniqueness indices. The
uniqueness indices were provided for each given predictor variable and indicated the percentage
of variance in the criterion that was accounted for by this predictor, above and beyond the
variance accounted for by the other predictors. This also helped to determine the distinction
between each beta weight. Once the uniqueness index had been determined, it was tested for
statistical significance. This means testing the null hypothesis that, in the population, the
uniqueness index for the variable of interests is equal to zero.
Chapter Four Results

The purpose of the present study was to examine the impact of psychological empowerment and environmental empowerment on the psychological strain of critical care nurses. The specific aims were to determine the perceptions of empowerment and psychological strain in critical care nursing, to assess the relationship between high levels of overall empowerment with psychological strain and ultimately to determined the specific dimensions of empowerment that are associated with reduced strain.

This section is based on the final sample of 120 participants, which was a 40% return rate out of 350 total critical care nurses. Demographic information about the participants is presented in sufficient detail in order to help make comparisons to other populations and to ensure that this population is similar to other critical care nursing populations to which comparisons might be made. Information about the pilot study is then presented in order to show changes that were made to the items based on the responses of critical care managers who have worked in the field for over 15 years. Results of factorial analyses are presented only for the dependent variable measuring environmental empowerment, as this was the only variable in this study that had not been previously used and validated in healthcare. Finally, the results of the t-test and multiple regressions are presented and interpreted.

Participant Demographics

Most research suggests that there are no differences in empowerment perceptions or strain outcomes with regard to any demographic variables (Spreitzer, Kizilos & Nason, 1997; Almost & Laschinger, 2002; Yoder & Kahn, 1992; Kraimer, Seibert & Liden, 1999; Laschinger, Boudrias & Gaudreau 2005; Kanter, 2001; Laschinger, Finegan, Shamian & Wilk, 2004). Since demographic variables have not been found to suggest that they influence the major study
variables in the literature, they were not included as factors in the analysis and are only used for descriptive purposes. In addition, there is little concern about how the demographics of the sample might affect the study given that this population is very similar to the demographics in populations of critical care nurses in other large hospitals in the U.S. Statistics about age, gender, part-time or full-time status, number of years on the same critical care-nursing unit, position, critical care specialty, and total number of years working in critical care nursing environments are provided in Table 4.1.

Table 4.1 provides the comparisons of major demographic variables for this study with the statistics from American Association of Critical Care Nurses on age, gender, education, number of hours worked in critical care, position and hours (Association of Critical Care Nurses, 2006). Again, these comparisons are important to this study given that the sample was not randomly selected and was chosen to represent one of many regional hospitals in the area. The comparison reveals that the sample is closely representative of critical care nursing populations across the U.S.

The total number of participants in the study was 120 and out of a possible 350, for a 40% response rate. The age for most of the nurses in this population was between 31 and 40 (35%) and between 41 and 50 (30%) that resembles the national average age for a nurse (average age of 47). Only 15% of nurses were 20-30, 17% were between 50-60 and 1.69% above 60. Thirty-one percent of the nurses in the National Statistics are 51-60 so the sample of nurses in the present study includes nurses that are slightly younger than the national average. The gender of this sample was also representative of the national average, i.e. 90% female and 10% male. This studies’ sample was 85% female. Most of the nurses worked full-time, 31-40 hours a week (58.33%) and had worked in critical care for less than 10 years (45%).
The numbers of critical care nurses who had worked in a critical care environment were slightly different from the national average. This study revealed that 64% had worked less than 10 years. More nurses in the national sample (38%) worked 11-20 years in critical care than in this study (19%). The hours nurses worked were also very similar. The national average statistics reveals 15% of critical care nurses working part-time and 14.17% for this study and 83% of national statistics worked part time while in this study it was 78.33. These descriptive statistics are offered in sufficient detail in Table 4.1 to help make comparisons to other populations and to ensure that my population was similar to other critical care nursing populations to which comparisons might be made.
Table 4.1

Demographic Variables Comparison to Percentage Statistics from American Association of Critical Care Nurses (2006)

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Frequency</th>
<th>Cumulative Percent</th>
<th>National Percents</th>
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**Pilot Study**

A pilot study was conducted to test the validity and reliability of the environmental empowerment scale. The pilot study consisted of seven management level critical care nurses who were not included in the final sample used for the study. These managers were selected as “experts” in the field of the critical care nursing based on the criteria that each had been in a management position in critical care nursing for more than 15 years. They were instructed to take the Environmental Empowerment scale, to record the time it took and to make comments on the clarity of the scales instructions and items.

Each participant indicated that the scale took between 10-15 minutes to complete and made a number of suggestions for wording questions differently and pointed out grammatical errors. As a result of this pilot study review, the following changes were made to the environmental empowerment scale according to the participants suggestions. Participants suggested that the words “job” and “performance” not be interchangeable and to be clear on whether to reference self (to me) or others such as, “The overall work I do is meaningful (to me.)” It was also suggested that the word “people” be replaced with “staff”. An example is, “We demonstrate trust in people by sharing sensitive information about our organizations performance” to “Our department demonstrates trust in staff by sharing performance information with each other”. In all items, “team or cluster” replaces organization, group or any other related word. Another item was changed from “We share information about organization performance so that people will act responsibility to improve performance” to “In our cluster or team we share information about hospital performance so that we can act responsibility to improve performance.” The item “We share a common vision for our organization at all levels of the organization” was changed to “In our department we share a common vision for our hospital at
all levels”. Finally, the following item was replaced “We work together to translate the vision into specific goal and timelines for everyone in the organization?” with “In our department we work together to translate the vision into specific goals and timelines for everyone in the hospital.”

Scale reliability was assessed by calculating coefficient alpha (Cronbach, 1951). Reliability estimates were .97, .89, and .87 for Environmental empowerment, Psychological empowerment and Strain scales. These estimates are very good and all exceeded .85 and are reported on the diagonal of Table 4.5 (Cronbach, 1951). The Cronbach’s alpha reliability for the overall empowerment construct was .97 and the coefficient alpha values all remained above .80 for each factor. All item-total correlations were above .70 and none of the variables, if dropped, would increase the overall alpha above .97 as calculated by SAS V8 and shown in Table 4.2. Subsequently, all items retained after the Promax were left in the scale. Finally, two, 3 and 4 factor models were reviewed for changes in coefficient alpha before and after the Promax rotation and no important changes were noted.

**Factor Analysis of the Environmental Empowerment Scale**

Responses to the Environmental Empowerment scale were subjected to an exploratory factor analysis using SAS V8 to identify the factor structures underlying the variables and to see if the original three-factor structure would hold up in this sample. Results of factorial analyses are presented only for environmental empowerment because there has been only one previous test of validity and reliability in an industrial setting and because the instrument has never been used in a healthcare setting.

The Environmental Empowerment Scale was developed in 1997 by Randolph and Blanchard (1995) and it consists of 30 Likert-type items ranging from 1-7 (almost never to
almost always) to reflect three original dimensions of empowerment (Information sharing (I), Team accountability (T) and Clear structures (C). Environmental empowerment is based on Randolph and Blanchard’s (1995) theory as a set of shared perceptions regarding the workplace. In the original scale there are ten items per variable measured from 1 (almost never) to 7 (almost always). The was 375 employees in one division of a Fortune 100 manufacturer of high-technology office and printing equipment. The employees were electrical, mechanical, and systems design engineers. Therefore, while factor analysis was completed on this scale, it was used only in an industrial setting rather than a healthcare setting and was subjected to factor analysis on only this one occasion. rotations were used because it is the most appropriate factor analysis method to use when there is the possibility that correlations among the factors might exist (Hatcher & Stepanski, 1994).

Prior to running the factor analysis, sampling adequacy for factor analysis was established with Kaiser’s Measure of Sampling Adequacy (MSA), (Kaiser, 2006). Kaiser’s MSA is a summary for each variable and for all variables together and of how much smaller the partial correlations are than the original correlations. From the data, the overall MSA is .94. Typically, when the MSA is greater than 0.8 the sample is considered an adequate sample size. All MSA values for each question are larger than .9, which suggests that the sample is adequate for Factor Analysis (Kaiser, 1982).

First, the data was subject to a three-factor factor analysis given that this was the original model and correlations and regressions were run. It was discovered in the correlation matrix that multi-collinearity was evident. Several diagnostics were used to confirm this. First, the correlation matrix was reviewed to find inter-correlations using the rule of thumb that numbers above .70 for variables within the same dimension and considered “high”. From the correlation
matrix, the following correlations were displayed (clear structures and information sharing .74; clear structures and team accountability .83 and team accountability and information sharing .67. These clearly indicated a possible problem of multi-collinearity that required further investigation particularly between clear structures and team accountability.

Tolerance, variance of inflation, eigenvalues and condition indices were then reviewed as to determine if there was indeed an existence of multi-collinearity. As a rule of thumb if tolerance is less than .20, a problem with multi-collinearity is indicated. The three Environmental Empowerment factors are .22, .26 and .35. So, while it does not meet the rule of thumb criteria that less than .20 indicates a problem, all three of these environmental empowerment numbers are still low (Thompson, 2000). In analyzing the Variance of Inflation, 4.0 are also an arbitrary but common cut-off criterion for deciding if multi-collinearity might be a problem. Factor 1 has VIF of 4.48, factor 2 had a VIF of 4.0 and factor 3 had a VIF of 3.0 all indicating a problem with multi-collinearity (Thompson, 2000).

The fact that multiple eigenvalues were found close to 0 also indicated a possible problem with multi-collinearity. In turn, condition indices were reviewed. Most of the eigenvalues are near zero and ranged from .02-.36. A condition index over 30 suggests serious multi-collinearity problems and index over 15 indicates possible multi-collinearity problems. Three factors are over 30, and three factors are over 15. Only one factor is below 15, again suggesting a multi-collinearity problem. When factors have a high condition index, it is important to review the various proportions column. Criteria for a sizeable proportion vary among researchers but the most common criterion is if two or more variables have a variance proportion of .50 or higher on a factor with a high condition index (Cohen & Cohen, 1983). None of the factors with a high index had two variables with .50 or higher but with all the other data analysis
so far, it definitely appears that multi-collinearity was indicated. The high correlation number between team accountability and clear structures indicated multi-collinearity and suggested that these two factors should be combined. A two-factor model was then subjected to factor analysis as discussed in the following section. The results of the two-factor model supports the combining of the two factors that were so highly correlated (team accountability and clear structures at .81). These factors ended up loading well together in the factor structure.

The first step in factor analysis involves the initial extraction of the factors. Of the four options considered to help make the “number of factors” decision, the scree test and a 5% criteria for proportion of variance was most appropriate for factor analysis. With the Scree test (Catell, 1978), the eigen values are associated with each factor and breaks appear between factors with relatively large eigen values and those with smaller eigen values. The Scree test for the present study also suggested using two factors.

The second criterion in making the number of factors decision was based on retaining a factor if it accounted for more than 5% proportion of the variance in the data set. Therefore, any factor that accounted for more than 5% or more of the common variances was retained. The variance is the explained the amount of the total variation for a given factor. The first factor had a proportion of variance of 86%. The second had a proportion of variance of 7%, and the third had a proportion of variance of 5%. This criterion supports retaining the first two factors as they have proportion of variances above 5%. Clearly, factor 1 accounted for the vast amount of variance. Squared multiple correlations (as prior communality estimates) were used to determine the amount of items variance accounted for by the components of factors. Communality refers to the percent of variance in an observed variable that is accounted for by the retained factors (Hatcher, 1994) and those variables with large communalities mean that they load heavily on at
least on of the study’s retained components. Based on these measures, it was concluded that the scale should be applied as a two-factor structure.

The following is a description of the factor analysis on the two factors. First completed in the factor analysis process is the orthogonal and varimax prerotation when the extracted factors are still uncorrelated. The next step was to complete promax rotation and to review the items and determine which to keep and which to drop. Questionnaire items and factor loadings are presented in Table 4.2. The promax rotation allows the orthogonality of the factors to be relaxed, and they are allowed to become correlated. All items were reviewed for high loadings on one given factor. In interpreting the rotated factor pattern, an item that had a loading equal to or greater than .40 on only one factor were considered to be meaningful loadings on that factor and were retained and those that loaded .40 or above on more than one factor were dropped (Hatcher & Stepanski, 1994). Using this criteria, five items were removed (E28t8, E25t5, E22t2, E4i4, and E2i2). The items that have been removed are indicated in Table 4.2 without bold numbers associated with them since they do not fall clearly into any one factor. Once these five items were removed, the remaining 25 items constituted the final scale.
Table 4.2

Results of Factor Analysis on Environmental Empowerment for two factors. (Note: those not in bold were items that were dropped)

<table>
<thead>
<tr>
<th>Factors</th>
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</thead>
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<td>7</td>
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<tr>
<td>(Eigenvalues)</td>
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Factor Loadings

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Eighteen items were found to load on the first factor, which included all items from the original clear structures factor and the team accountability factor and was subsequently labeled Clear Structures and Accountability, and seven items that were originally designed to measure information sharing were found to load on the second factor, which was subsequently labeled Information Sharing. So, all of the items for team accountability and for clear structures loaded together and all the items for information sharing loaded together. Finally, the information-sharing factor loaded only items that had loaded in that factor in the original design. The items that were removed were poorly worded and did not clearly target any of the meanings of the three factor structures and did not adequately load.

Finally, table 4.4 presents inter-factor correlations between the two environmental empowerment factors. The correlations are all near .50 that suggests that the factors are moderately correlated which would be expected since they are all measuring the same overall construct, but not so highly correlated to suggest that the factors are not distinct. These findings are similar to the findings in the Randolph, Seibert & Silver (2004), the only other study that used this instrument.
Table 4.4

Inter-Factor Correlations

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<tr>
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<td>1.000</td>
</tr>
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</table>

In summary, all but six items were retained based on the criteria that any item should load at .40 or above on one factor. The final scale model had 25 items in two factors and this scale model was used in the regression analysis.

Descriptive Statistics and Inter-correlations for all Variables

The data were analyzed to screen for any errors, test multiple regression assumptions, and obtain simple descriptive statistics. There were no missing data, no out of range observations and while the empowerment scores were high, they were not so high as to skew the data. Table 4.5 offers means, standard deviations, correlations and coefficient alpha reliability estimates. The matrix in Table 4.5 revealed the pattern of simple bivariate correlations between strain and the two kinds of empowerment; psychological and environmental empowerment. The matrix provides important information about the correlations among the predictor variables. When using multiple regression, an ideal predictive situation is typically one in which each predictor variable displays a relatively strong correlation with the criterion, while the predictor variables display relatively weak correlations among themselves (Hatcher & Stepanski, 1994). With this in mind, the correlations present show that the predictive situation obtained with the current data set is what would be expected. Four predictors display negative correlations with strain, and while most of the predictors display correlations with each other, the highest correlations are within the same factor.
Table 4.5  
Means, Standard Deviations, Correlations, and Coefficient Alpha Reliability Estimates

<table>
<thead>
<tr>
<th>Variable</th>
<th>Median</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</thead>
<tbody>
<tr>
<td>1. Meaning</td>
<td>6.7</td>
<td>6.3</td>
<td>.92</td>
<td></td>
<td>.92</td>
<td></td>
<td>.90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Impact</td>
<td>4.5</td>
<td>4.5</td>
<td>1.6</td>
<td></td>
<td>* .26</td>
<td></td>
<td>.91</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Competence</td>
<td>6.4</td>
<td>6.4</td>
<td>.83</td>
<td></td>
<td>* .31</td>
<td>* .28</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Self-</td>
<td>5.6</td>
<td>5.6</td>
<td>1.2</td>
<td>* .60</td>
<td>* .50</td>
<td>* .36</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>determination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Factor 1</td>
<td>5.72</td>
<td>5.45</td>
<td>1.10</td>
<td>* .52</td>
<td>* .50</td>
<td>* .31</td>
<td>* .51</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Factor 2</td>
<td>5.29</td>
<td>5.08</td>
<td>1.22</td>
<td>* .42</td>
<td>* .65</td>
<td>.23</td>
<td>* .50</td>
<td>* .71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Strain</td>
<td>1.80</td>
<td>1.98</td>
<td>.74</td>
<td>* -.23</td>
<td>* -.31</td>
<td>* -.18</td>
<td>* -.19</td>
<td>* -.43</td>
<td>* -.35</td>
<td></td>
</tr>
<tr>
<td></td>
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</tbody>
</table>

Note N=120. Decimals omitted from correlations and reliability and reliability estimates. Coefficient alpha estimates are in parenthesis on the diagonal. All correlations significant at p<.05 are bold unless indicated with a single * which means the significance is p<.001. Variables 1-9 are on a 1-7 Likert scale and variable 10 is measured on a 1-5 Likert scale.
Results based on Research Questions

Question #1. Do nurses who perceive high environmental empowerment and high psychological empowerment report less psychological strain than nurses who perceive low environmental empowerment and low psychological empowerment (means, standard deviations, t-tests and if significant, Cohen’s d for magnitude of effect)?

To answer this first research question t-tests were used to test the hypothesis that there is no difference between nurses who perceive high levels of overall empowerment perceptions and those that perceive low levels of overall empowerment perceptions with respect to their mean strain score. High empowerment groups were nurses with a score of (more than) one standard deviation above the mean on both environmental empowerment and psychological empowerment as having high empowerment and nurses who had a score of (less than) one standard deviation below the mean on both environmental and psychological empowerment were determined as having low empowerment. The mean scores of two groups on strain were compared. The groups differed significantly, so the effect was expressed in a measure d (raw difference between means divided by the standard deviation of the total group). See Table 4.6 for results.
Table 4.6

*Mean scores on Strain for groups with different combinations of empowerment, results of t-tests and effects*

<table>
<thead>
<tr>
<th>Strain</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summation of 1-5 scaling</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strain</td>
</tr>
<tr>
<td></td>
<td>M</td>
</tr>
<tr>
<td>High Overall Empowerment</td>
<td>18.1**</td>
</tr>
<tr>
<td>Low Overall Empowerment</td>
<td>22.3**</td>
</tr>
</tbody>
</table>

$t=3.17$
Cohen’s $d=.6$
$r=.28$

**p<.001
Results were analyzed using an independent samples t-test. This analysis revealed a significant difference between the two groups \( t(3.17); p<.05 \). The sample shows that subjects in the high-empowerment condition scored lower on strain than did subjects on the low empowerment condition (for high empowerment group, \( M=18.1, \ SD=6.5 \); for low empowerment group, \( M=22.3; \ SD=8.1 \)) and the difference is significant based on a \( p<.05 \).

Because the means are significantly different and in the predicted direction with the high empowerment group having a lower mean strain score than the low empowerment group, an effect size calculator (to measure Cohen’s \( d \)) was used to determine the size of the effect. Cohen’s \( d \) suggests that the difference is moderately significant with a value of .6 (Cohen, 1981).

With regard to this first research question, it is concluded that there is indeed a difference between empowerment and strain. For nurses who perceive high empowerment, their scores indicated lower strain perceptions. On the contrary, nurses who perceive low empowerment indicated higher strain perceptions.

**Question #2**

Question #2 What is the predictive power of psychological empowerment (meaning, impact, competence, determination) and environmental empowerment (Factor 1 – clear structures and team accountability; Factor 2 – information sharing) on psychological strain of critical care nurses?

It is assumed in multiple regressions that the residuals observed follow a normal distribution. This means that the errors in every prediction have the same variance and that the variance is constant with the predictions. A histogram of the residuals also reflected a normal distribution so there were no violations of multiple regression assumptions. A bivariate scatter plot of the dependent variables with strain shows a linear relationship with no curvature. Finally,
a stem and leaf plot and a Cooks-d was also performed and revealed that there are no variables that are skewed and no problematic outliers that risk inaccurate interpretations of the data (Hatcher, 1994). Finally, a review of the median scores with the mean scores also reveals no problematic outliers to investigate.

As said, all but two of the dimensions were correlated (self-determination and information sharing) in the predicted direction and some predictors are more strongly related to strain than others are. Specifically, competence and self-determination displayed the weakest correlations at -.18 and -.19. The highest correlations were between strain and the two environmental empowerment factors with a total correlation of -.43. Clear structures and team accountability as a combined factor is most highly correlated with reduced strain with a correlation with a correlation of -.44. Each of these correlations is statistically significant at the .0001 level.

The correlation coefficient R2 indicates the percent of variance in the criterion variable that is accounted for by the linear combination of predictor variables. The R2 was .28, which means that the linear combination of the independent variables of empowerment accounts for 20% of the variance in strain. To test the null hypothesis that R2 is zero in the population, the F value of 4.85 was examined and was associated with a p value of .0002. This suggests that the linear combination of empowerment accounts for a significant amount of variance in strain.

The size of the model R2 to be meaningful also depends on what has been found in prior research concerning the strain variable being investigated. Given that there are very few studies using a consistently defined environmental empowerment construct, psychological empowerment and psychological strain in critical care, it is difficult to compare the percent of variance in other studies. A review of psychological empowerment studies from the literature
review presented in this study suggests that the percent of variance in strain ranges from .25-.39 (Spreitzer, 1995; Kramer, Seibert & Liden, 1999; Laschinger, 2004; Randolph, Seibert & Silver, 2004) and so these results are consistent with prior research.
Table 4.7

*Beta weights and uniqueness indices obtained in multiple regression analysis prediction of strain.*

R² = 0.28  
F = 4.85  
P = 0.0002

<table>
<thead>
<tr>
<th></th>
<th>b</th>
<th>SE</th>
<th>B</th>
<th>t</th>
<th>p</th>
<th>Uniqueness Indices R²</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>3.82</td>
<td>0.62</td>
<td>0.00</td>
<td>6.21</td>
<td>&lt;.0001</td>
<td>0.0015</td>
<td></td>
</tr>
<tr>
<td>PMean</td>
<td>-0.04</td>
<td>0.10</td>
<td>-0.05</td>
<td>-0.46</td>
<td>0.65</td>
<td>0.0015</td>
<td>0.23</td>
</tr>
<tr>
<td>PComp</td>
<td>-0.04</td>
<td>0.09</td>
<td>-0.04</td>
<td>-0.47</td>
<td>0.64</td>
<td>0.0069</td>
<td>0.23</td>
</tr>
<tr>
<td>PSelf</td>
<td>0.08</td>
<td>0.08</td>
<td>0.11</td>
<td>0.78</td>
<td>0.33</td>
<td>0.0136</td>
<td>1.03</td>
</tr>
<tr>
<td>Pimp</td>
<td>-0.08</td>
<td>0.06</td>
<td>-0.16</td>
<td>-1.39</td>
<td>0.16</td>
<td>0.0521</td>
<td>2.09</td>
</tr>
<tr>
<td>FAC1 Clear Structures</td>
<td>-0.37</td>
<td>0.10</td>
<td>-0.40</td>
<td>-2.72*</td>
<td>.0007</td>
<td>0.0522</td>
<td>8.01*</td>
</tr>
<tr>
<td>FAC2 Information Sharing</td>
<td>0.02</td>
<td>0.10</td>
<td>0.04</td>
<td>0.25</td>
<td>0.80</td>
<td>0.0004</td>
<td>0.06</td>
</tr>
</tbody>
</table>

* p < 0.01
The statistical significance of regression coefficients was viewed as only one indicator of variable importance, and should always be combined with additional information, such as the size of the standardized regression coefficients uniqueness indices. Therefore, beta weights (standardized multiple regression coefficients) and uniqueness indices were reviewed to assess the relative importance of the six variables in the prediction of strain. The review of beta weights is to determine not only the predictive power of the six variables but it also determined the most important of the six variables in predicting strain. The betat weights are listed and explained in the following paragraphs.

**Meaning**

While theory on the relationship between meaning and strain was equivocal in previous research the meaning dimension was found to be negatively related to strain but not significantly. (B=-.05, .65).

**Competence**

A sense of competence was also found to be negatively related to lower levels of strain (B=-.04, p<.64) but not significantly. A sense of competence explained the least variance beyond the other three dimensions of empowerment in predicting effectiveness.

**Self-determination**

Consistent with prior research, a sense self-determination was positively related to strain (B=.11, p<.33) although not significantly. This could be because greater self-determination in healthcare may lead to taking on greater responsibility and therefore greater degrees of strain. Additionally, a greater sense of self-determination could cause strain perceptions if the surrounding environment thwarts personal work efforts.

**Impact**
Of the four dimensions of psychological empowerment most support was found for the relationship between impact and lower strain (B=-.16, p<.17). The impact dimension explained some additional variance beyond the other three dimensions in predicting strain.

**Clear Structures and Team Accountability (Factor 1)**

Clear Structures and Team Accountability combined (Factor 1) was most highly related to reduced strain and the only environmental empowerment factor that was significant with B=-.47, p < .0007. After factor analysis, this factor consisted of items that make sense for the critical care environment where patient safety is dependent on clearly designed and understood processes that must take place in any kind of medical care. Patient safety might be considered an ultimate goal for a nurse and would naturally be the primary source of strain. Clear structures allow a nurse to proceed with reduced strain because they can operate more confidently with greater accuracy, fewer concerns about making mistakes and ultimately feel less strain overall about the success of work.

**Information Sharing (Factor 2)**

Information Sharing (Factor 2) was positively related to strain but not significantly with B=.04 and p<.80. The information sharing dimension that rated very little variance beyond the other three dimensions in predicting effectiveness. Perhaps this was not significantly related as a single constant because unless structures are clear about how to process information, information sharing alone cannot hold a significant value. The findings regarding the uniqueness indices (R2) matched those for beta weights in that only Clear Structures and Team Accountability displayed significant indices (F (1,112) =3.95, p<.05)) and (F (1,112=, p<.001; model R2=.28))
In summary, results were analyzed using correlations, t-tests and multiple regressions. The t-test revealed a significant difference in strain scores between nurses with overall high-levels of empowerment and nurses with overall low levels of empowerment. Using multiple regressions, strain scores were regressed on the linear combination of information sharing, clear structures and team accountability, meaning, impact, competence and self-determination. Finally, Beta weights (standardized multiple regression coefficients) and uniqueness indices were then reviewed to assess the relative importance of the variables in the prediction of strain. All coefficients except self-determination and information sharing were in the predicted direction. The results show that only the Clear Structures combined with team accountability factor of environmental empowerment displayed a significant beta weight. A secondary purpose of this study was to improve the environmental empowerment scale and to make it relevant to critical care work environments. The results of the factor analysis showed that clear structures and team accountability should be combined as one dimension.

What is unique about the present study is how the constructs environmental empowerment (Randolph & Blanchard, 1997) psychological empowerment (Spreitzer, 1995) and psychological strain (Osipow, 2001) are used in the context of critical care nursing. Additionally, the present study differs from other research on strain in that it addresses factors that reduce strain, not the factors that cause strain.

These findings support a compatibility of Spreitzer’s (1995) construct with Blanchard’s (1997) environmental empowerment construct. The empowerment literature suggests a correlation between empowerment dimensions suggested by Randolph and Blanchard (1997) and reduced psychological strain in nursing (Harding, Munro & Rodwell, 1998). Laschinger and Havens (1996) and Heinrich (2000) found that in nursing, empowerment was strongly related to
perceived control over nursing practice, which was subsequently related to reduced psychological strain.

The doctrine of corporate liability is to hold hospitals accountable for failures to ensure a safe and conducive environment for patient care. Because the healthcare work environment will only continue to present enormous pressures, and psychological strain is typically dealt with after it has occurred, nursing strategies must be developed to reduce risks. In order to address the problems of psychological strain there needs to be a better understanding of the concept of psychological strain, its causes and its consequences; but most important, dimensions that are correlated with reduced strain. Strain research has shown that organization change is a progressively worsening problem in nursing because it leads to psychological strain and increases the risk of injury/illness (Savery & Luks, 2000). Empowerment strategies have been proposed as having possible solutions; however, there is no consistent definition of the two levels of empowerment and, therefore, not enough research currently exists that might determine which components of empowerment are most likely to reduce psychological strain.

This change in service setting as well as other external factors such as pressures from HMOs (Health Maintenance Organizations) has also resulted in decreased lengths of patient stay in hospitals and a decline in the numbers of beds staffed. Therefore, the acuity of patients increases as those patients remaining in hospitals were those too medically complex to be cared for in another setting (Hass, 2005). Other factors shown to increase nurses’ psychological strain include increased workload and patient care, interpersonal relationships and bureaucratic political constraints. Lack of professional latitude was also a major factor in job strain identified by Dolan and Sullivan (1993).
Chapter 5 Conclusions and Implications

This section will provide a summary of the study, a review of the findings from the statistical analysis of data, and conclusions based on the research questions. In this way, the implications for research and practice can be drawn from a full overview of the study.

Summary of the Study

In order to draw conclusions regarding the results of the present study, it is important to refer to the problem, the research questions, the review of literature and the methods first. High levels of psychological strain in critical care nursing are well documented and associated with hazardous impact on performance. The present study is significant because psychological strain is predicted to worsen and is associated with poor performance, patient safety and rates of mortality in healthcare (Hass, 2005). Recall the problem is that while psychological empowerment is well defined in the related literature and environmental empowerment is gaining theoretical support, the two constructs have not been used to clearly support conclusions about how empowerment could affect psychological strain specifically for critical care nurses.

So, while empowerment and its impact on psychological strain has shown promise in research, very few studies have found a relationship between a consistently defined environmental empowerment construct, psychological empowerment and psychological strain in critical care. As a result, empowerment as a construct cannot be very useful in healthcare efforts to reduce strain and meet indirect and ultimate goals of patient care and safety. Most important, the leading environmental empowerment constructs used in nursing do not include the measurement of teamwork or of clarity of structures that the literature suggests could be important.
The purpose of the present study was to examine the impact of psychological empowerment and environmental empowerment on the psychological strain of critical care nurses by surveying 350 critical care nurses using survey instrument to measure each variable. The specific aims are to determine the perceptions of empowerment and psychological strain in critical care nursing, to assess the relationship between high levels of empowerment (determined as being one standard deviation below the mean) with psychological strain and ultimately to determined the specific dimensions of empowerment that are associated with reduced strain.

The environmental empowerment scale had not been used in healthcare although the dimensions were promising for use in healthcare based on the review of the literature although they had not been empirically studied. So, an aim of the present study sought to find support for the promising information from the literature that suggests empowerment dimensions in the workplace are important in efforts to reduce nursing strain. Of particular interest is the dimensions of environmental empowerment; team accountability, information sharing and clear structures. These sound promising in the literature to critical care nursing but have not been well studied. In fact, the majority of research has focused primarily on empowerment as a single construct and has not examined the individual dimensions of environmental empowerment with consistency. Moreover, the leading environmental empowerment constructs used in nursing do not include the measurement of teamwork or of clarity of structures so that nurses can work more autonomously. Multiple regression analysis served to determine that clear structures and team accountability were significant predictors of strain and that the overall model accounted for 28% of the variance in strain.
Findings

The findings offer some interesting results that will be disused in the conclusions section. First, the results of the factor analysis showed that clear structures and team accountability should be combined as one dimension in the environmental empowerment scale. There was a secondary benefit to this in that the scale is more useable for critical care contexts. It also provided results worth making conclusions about. As said previously, it makes sense that clear structures and team accountability would be highly correlated. Clear structures mean that procedures are clearly understood and in critical care environments, procedures almost always involve a team of people. So, structures in critical care involve people’s roles and therefore these would be combined in a critical care nursing environment.

In the first research question the mean scores of two groups on strain were compared, and it was found that the groups differed significantly, so the effect was expressed in a measure d (raw difference between means divided by the standard deviation of the total group). Results were analyzed using an independent samples t-test. With regard to this first research question, it is concluded that there is indeed a difference between empowerment and strain. For nurses who perceive high empowerment, their scores indicated lower strain perceptions. On the contrary, nurses who perceive low empowerment indicated higher strain perceptions. The mean scores for the psychological perception dimensions were meaning, 6.3, Impact 4.5, Competence 6.4 and Self-determination 5.6. The mean scores for environmental empowerment were Factor 1 (clear structures and team accountability) 5.08 and Information sharing 5.45.

The findings regarding the second question revealed that the most predictive dimensions of empowerment in the prediction of strain in the present study were team accountability and clear structures. Most recent research that used Spreitzer’s (date) psychological empowerment
scale found that overall psychological empowerment accounted for an important amount of variance in strain and other outcomes, and none of the dimensions alone were good predictors of strain. Similarly, the present study suggests that most of the dimensions for both levels of empowerment alone were not good predictors but when the dimensions of both empowerments were used together, they predicted strain in critical care fairly well.

The review of beta weights not only determined the predictive power of the six variables but also determined the most important of the six variables in predicting strain. The correlation coefficient $R^2$ indicates the percent of variance in the criterion variable that is accounted for by the linear combination of predictor variables. The $R^2$ was .28, which means that the linear combination of the independent variables of empowerment accounts for 28% of the variance in strain. To test the null hypothesis that $R^2$ is zero in the population, the $F$ value of 4.85 was examined and was associated with a $p$ value of .0002. Therefore, it is concluded that the null hypothesis is rejected and it can be concluded that the obtained value of $R^2$ is statistically significant. This determines that the linear combination of empowerment accounts for a significant amount of variance in strain.

The meaning of the size of the model $R^2$ depends on what has been found in prior research concerning the strain variable being investigated. Given that there are very few studies using a consistently defined environmental empowerment construct, psychological empowerment and psychological strain in critical care, it is difficult to compare the percent of variance in other studies. A brief review of psychological empowerment studies from the literature review presented in this study suggests that the percent of variance in strain ranges from .25-.39 (Spreitzer, 1995; Kramer, Seibert & Liden, 1999; Laschinger, 2004; Randolph, Seibert & Silver, 2004) and so these results are consistent with prior research. The findings in the present study
suggest that higher levels of overall empowerment are related to reduced strain. Additionally, overall empowerment accounted for 28% of the variance in strain even though only one of the six was a significant predictor of strain. Therefore, while only one of the dimensions was significant in predicting strain, when all of them are used together they served as an important and useful predictor of strain.

Because of the lack of a clearly defined construct of environmental empowerment, another goal of this study is to further define and add validity to this construct. Randolph and Blanchard’s environmental empowerment scale was tested in many settings and although it has not been tested directly in nursing, each of the dimensions has been studied separately as part of other environmental empowerment models in nursing and has been associated with reduced psychological strain in those settings (Randolph, Seibert & Silver, 2004). The scale did not hold up well in the present study as it was originally designed with three factors; information sharing, clear structures and team accountability. Two factors were combined, clear structures and team accountability. This makes sense given that structures may be clear but would be irrelevant if teams were not held accountable to them, and likewise, teams may be held accountable but if there are no structures to be held accountable to, this would also be irrelevant. It makes sense that these two dimensions were highly correlated and this discovery improved the overall measure.

**Conclusions**

The first research question seeks to determine if there was a significant difference between those nurses that experience high levels of empowerment and those that experience low levels of empowerment prior to identifying which dimensions were most predictive of strain. It was found that there was a significant difference between nurses who perceive high levels of empowerment
and low levels of empowerment with regard to strain. What is interesting is that the empowerment levels for critical care nurses in the present study were quite high and strain levels relatively low. The results support current research that suggests nurses with an overall high sense of empowerment may experience fewer strain symptoms regardless of the stressors in their environment (Spreitzer, 1997; Seibert, Silver, & Randolph, 2004). The conclusion is that those nurses with an overall high perception of empowerment are less likely to experience strain than those who do not and would make sense in the present study where strain levels are so inherently high and process and accuracy are more important than in most settings.

The second research question seeks to determine which dimensions of empowerment were good predictors of strain. First, the findings in the present study do not suggest the level of significance for the psychological dimensions that the previous research suggested. Most previous research suggested that all six of the dimensions of empowerment used in this study would be negatively correlated with strain and this was true in this study except for the factors of self-determination and information sharing.

This may result from differing contexts for studying psychological strain. Most other psychological empowerment research has not been done in healthcare including the initial development of the theory and survey itself. The context for this study is different than most other settings and is particularly unique in that the environment is inherently very stressful and therefore provides the best setting for studying strain. In environments where strain is so extreme and where the reliance on others is greater than in most settings, psychological empowerment may be less significant. In other words, critical care nurses are probably more strained by demands coming from their surrounding environment and therefore would be more impacted by environmental dimensions than psychological ones because of the nature of the tasks at hand.
Critical care nursing involves environmental demands that include strict requirements based on physician orders and patient status and all with an urgency that prevents psychological reflection.

Looking more closely at the psychological empowerment dimensions, meaning, competence and impact were negatively related to strain while self-determination was positively related to strain. Meaning and competence were correlated negatively with strain as predicted but did not have a significant beta weight, which is surprising. Meaning, or purpose, involves a fit between the needs of one’s work role and one’s values, beliefs and behavior while competence is a belief that one possesses the skills and abilities necessary to perform a job or task well. Perhaps possessing the skills to perform well is important but may not be important enough to help with reduced strain when examined alone.

The impact dimension is also not significantly associated with reduced perceptions of strain but is most likely to predict strain of the four dimensions. Impact is defined as the degree to which an individual can influence strategy, administration or operating outcomes at work (Thomas & Velthouse, 1990). Impact refers to an individual’s sense of control over organizational outcomes. Impact is different from self-determination, which refers to an individual’s sense of control over his or her own work (Thomas & Velthouse, 1990). Impact refers to individual’s sense of control over organizational outcomes where self-determination implies job involvement; impact implies organization involvement (Sprietzer, 1995). Those nurses who feel that they make an impact at their workplace and for their patients may feel considerably less strain than those who do not. Perhaps if a nurse feels a sense of impact they may perceive greater possibilities in being about to accomplish large-scale outcomes that will benefit not only the organization but themselves as well. A nurse who feels a sense of impact may have less strain knowing that they can be a part of beneficial large-scale changes.
Self-determination is defined as an individual’s sense of having choices in initiating and regulating actions (Thomas & Velthouse, 1990). While impact is the perception that one has influenced strategic administrative or operating outcomes at work to make a difference, self-determination is an individual’s sense of control over his or her own personal work and is consistent with notions of personal control (Greenberger, Kroger & Jew, 1999). Self-determination did not significantly predict strain and in fact was positively correlated to strain perceptions. This could suggest that a nurse who feels that they have more choices in initiating and regulating actions may also feel more strain because they are in an environment that requires an extreme and inherent dependence upon people and processes. That same nurse may certainly experience more strain in not having more control over their actions. Nurses who are self-determined and seek control over their personal work may be more likely to feel uncomfortable in a setting such as healthcare and critical care in particular that does not provide many opportunities to work this way. Even though the critical care nurse environment is empowering does not mean it allows for strict attention or control over personal tasks. Again the lack of significance for this dimension may have to do with the fact that the setting for examining this dimension is different than in most previous studies. So, while research has found this dimension to be related to strain, in a healthcare setting, self-determination may increase strain because of the stress that is so closely related to the environment where self-determination could actually work against some efforts.

Competence is a belief that one possesses the skills and abilities necessary to perform a job or task well (Gist, 1987) and is analogous to agency beliefs, personal mastery or effort-performance expectancy (Bandura, 1977). Competence is one of the four dimensions of Spreitzer’s empowerment tool and has been found to be important for employees in intense
environments (Yam, & Shiu, 2003). Surprisingly, this was not significant in this study for similar reasons that self-determination was not significant. A critical care nurse may have competence but if the surrounding environment is not in place to put that competence to good use, competence will not stand alone well as a predictor of strain. The results of this study also support research that suggests that the environmental empowerment dimensions, clear structures and team accountability are predictors of strain in healthcare (Laschinger, Finegan, Shaiman & Wilk, 2000; Savory & Luks, 2001). It was predicted that environmental empowerment overall would be negatively correlated with psychological strain. Overall, environmental empowerment and each of its individual dimensions were found to be more highly correlated to strain than psychological empowerment even though only one of the dimensions (team accountability and clear structures combined) had a significant beta weight related to reduced strain while the second dimension of information sharing was positively correlated. It is not possible to compare these results to other research given that this environmental empowerment measurement has not been used in nursing and because once factor analysis was complete, the measurement changed. Instead of the three original dimensions that were team accountability, clear structures and information sharing, two were combined (team accountability and clear structures). Clear structures and team accountability were combined after factor analysis and as a single factor is significantly related to strain.

Clear structures is defined by how well the workplace sets clear expectations, expresses values, designs structures and guidelines for process and performance improvement and has systems in place for holding people accountable. The results of this study suggest that if these are in place, there is a high likelihood that employees will have less strain than if those systems are not in place. It makes sense that a nurse’s strain would be reduced when the steps and processes
for a successful outcome are very clear, consistent and understood. It is more stressful to attempt to accomplish an outcome when the intended outcome is not even known. When it is known and clear, it is easier to complete the steps and takes less effort to accomplish an outcome successfully.

Team accountability is defined as the perception that teams are the locus of decision-making authority and performance accountability in organizations (Blanchard, Carlos & Randolph, 2001). Studies have shown that empowered work teams have increased productivity and efficiencies over those who perceive that they have a low or non-existent amount of influence over decisions and find their jobs stressful (Laschinger, Finegan, Shaiman & Wilk, 2000; Savory & Luks, 2001. This means that critical care nurses rely on understanding each employee's role, their own expectations and need for accountability to be consistent. It is not surprising that clear structures and team accountability would be most significantly related to reduced strain in a critical care environment. Some research has suggested that psychological empowerment may be a result of a highly empowered environment. Kanter (1993) argued that organizations with strong organizational communication systems, network-forming arrangements, access to resources, and effective job designs could contribute to psychological empowerment. Kanter argued that the impact of organization social structures on employee behavior is far greater than the impact of employee personality characteristics. If true, that is important to consider when interpreting these results that indicate that the only significant predictors of strain were the environmental empowerment dimensions. When it comes to patient care in critical care environments much of the strain employees feel has to do with the external expectation for patient safety and patient survival.
For critical care nurses, this expectation is heightened and more difficult given that patients in these environments are at highest risk and the accuracy of the processes and procedures required to accomplish this expectation has little room for error. The more difficult the task and the higher the expectations, the more important it is to have an explicitly clear sense of how to make those expectation happen from the standpoint of both procedure and team expectations. It is more likely that when a nurse can feel secure procedures and team expectations, strain levels are reduced. This is particularly important since nursing literature mentions the importance of teams and process, the leading environmental empowerment constructs used nursing do not consistently include the clear structures and team accountability. It is interesting that information sharing was not significant and was positively related to psychological strain. Perhaps this could be explained in that information sharing cannot reduce strain if the structures and processes being communicated are not clear and if the team responsible for communicating them is not held accountable for doing so. Certainly, during a surgery or critical care observation for instance, a physician may share need he has to care for a patient or a patients status may drastically change but if it is not clear how to proceed or who is responsible for what aspect of the process, that shared information is useless. In other words, information sharing would not be a good predictor on its own and could increase strain levels under some circumstances.

The factor analysis of the environmental empowerment scale offered some very interesting results. First, it is clear that factor analysis was an important step in the study because the scale had never been used before in healthcare. The results did show that it did not hold up well in it’s original form and therefore would have offered different, and less useful conclusions. Having done factor analysis, it was discovered that clear structures and team accountability were very highly correlated and were combined. This means that clear structures have little meaning if
there is no team accountability and that team accountability has little meaning if the structures they are being held accountable to are not clear.

**Implications**

The objectives of this study were to determine whether nurses with high empowerment perceptions had different strain perceptions than nurses with low empowerment perceptions and to determine which empowerment dimensions were significant. It was discovered that nurses with high levels of empowerment were less strained than those with low levels and that clear structures and team accountability were significant predictors of strain. These findings are important and provide implications for hospital management and training. This implies that for hospitals, efforts to enhance a nurse’s overall empowerment perceptions and efforts to foster clarity of structures and team accountability will be important. The specific recommendations are offered in the following order: 1. To incorporate a focus of psychological dimensions into training programs and management development. 2. To initiate a variety of efforts that ensure that clarity of structures and team accountability are aligned. 3. To develop nurse leaders to meet the needs of the complexities of healthcare changes through empowerment strategies. 4. To examine the environmental empowerment scale through factor analysis.

The first recommendation is to incorporate a focus of psychological dimensions into training programs. Efforts can begin with the dimensions of psychological empowerment, which included a sense of meaning, competence and impact. While these dimensions did not predict strain significantly as single constructs, they are worth looking at as a part of the model. Hospital management could work to enhance a sense of meaning and competence in job coaching strategies and performance evaluations to examine job fit and training needs. The hospital should ensure that team members understand that everyone is responsible for playing an active role in
recognizing meaningful contributions and should regularly evaluate its recognition system. The hospital should recognize employees so that individuals receive recognition consistent with their personal definition of meaning and development at every stage of their professional career.

Impact should be fostered by allowing employee involvement in a number of possible areas such as strategic goal setting, shared governance, hospital committees, and needs assessments, change initiatives, process studies and rotating team leadership. Since self-determination could result in additional strain, hospitals might want to allow some personal leniency in work responsibilities that do not have to be so strictly regulated such as scheduling, encouraging job transfers and exchanging roles and responsibilities where appropriate.

Perhaps even more relevant is the focus on psychological empowerment in management training. Spreitzer, (1997) found that each of the individual dimensions of empowerment was related to behaviors conducive to managerial effectiveness (Spreitzer, 1997). Meaning results in high commitment and concentration of energy (Kanter, 1983). Competence results in effort and persistence in challenging situations, coping and high goal expectations and high performance. Impact is associated with an absence of withdrawal from difficult situations and high performance (Ashforth, 1990). Management courses could focus on helping leaders find a sense of meaning, competence, impact and self-determination. Meaning results in high commitment and concentration of energy (Kanter, 1983). Competence results in effort and persistence in challenging situations, coping and high goal expectations (Bandura, 1986) and high performance. Self-determination results in learning, interest in activity, and resilience in the face of adversity. Impact is associated with an absence of withdrawal from difficult situations and high performance (Almost, 2000). Each of these dimensions could be incorporated into training program objectives, even if secondary to more prominent objectives. The fact that information
sharing was not significantly related means that improvements in this area alone would not be adequate but this dimension is still important given that it is part of an overall good model. For instance, the elements of clear structures could not be present if information about those structures were not shared appropriately or if the teams in the organization were not held accountable to those structures. It suggests that the information that is shared must be specific to the structures and processes that are already clearly in place and to team expectations.

The most important implications are that hospital critical care units should first focus on the clarity of structures and processes and team accountability. Team accountability involves efforts to enhance commitments to goals developed by the team itself, a culture that encourages teamwork as a focal point, and processes for how to manage team expectations. It is critical for hospitals to create a culture where healthcare workers are able to candidly approach each other about their concerns regarding structures, have systems in place to hold one another accountable, and have developed other mechanisms to measure performance, improve processes as a group and to continue to clearly improve and delineate structures and processes. In this way, expectations are not only clear for each individual but can be understood and applied toward the larger picture of the team expectations for the hospital and for themselves.

The hospital should regularly evaluate the processes that define each team member’s accountability for collaboration and how unwillingness to collaborate will be addressed. Individual team members should be provided education on how to share accountability through programs or team building meeting that focus on developing ground rules and team-based expectations and measurements for team accountability. Team meetings and performance evaluations should regularly evaluate the clarity of structures, processes, procedures and expectations. Team members should be given support for and access to education programs that
develop team-building skills that include activities that bring employees together as one functioning unit that can withstand errors, miss-communications, organization change and problematic employees.

Finally, regular consistent team self-evaluations must take place to review the clarity of the ground rules and to self-evaluate the accountability of the team to those rules. Finally, team decision-making in healthcare is an increasingly important skill and a significant gap often exists between what nurses are accountable for and their ability to participate in decisions that affect those accountabilities. Hospitals need to provide team members with support for strategies that ensure collaborative decision making in training programs that include mutual goal setting, negotiation, conflict management, systems thinking and performance improvement and should incorporate clearly articulated hospital values into each decision (AACN, 2005).

Clear structures involve the setting of clear expectations for individuals and teams, processes and values, structures and guidelines for process and performance improvement and systems for holding people accountable to those structures. Again, the aim is to ensure that team accountability and clear structures are well aligned. Since nurse managers usually oversee these two areas, they could be instrumental in searching for improvements in meetings and interviews of employees and other departments, and in working closely with HR and other regulating departments that create policies. The next step would be to use the team for ideas on how to develop systems that will continuously ensure each team member is clear about what those structures and expectations are.

It may be helpful for hospitals to target nurse managers as catalysts for improvements in the dimensions of clear structures and team accountability. More and more, the nurse manager will be responsible for a different kind of leadership that will include being able make shared
responsibility in team’s effective. Almost & Laschinger (2001) suggest that managers should think more about teams and the need for change in management style as the development and confidence level of the worker changes. Nursing management is moving to a power relationship of shared responsibility and nurse managers will be instrumental in making this happen successfully.

There are some important barriers to implementing new management theories such as team development in hospitals where their traditionally bureaucratic, complex and highly departmentalized structure tends to create a particular culture and support a specific leadership style (Dempsey & Larson, 2004). On the one hand, the professional nurse is expected to develop an ever-increasing repertoire of technical expertise in clinical care and yet there is a distinct lack of power granted for them to make managerial decisions (Dempsey & Larson, 2004). Hospitals should create and evaluate structures that ensure that the decision-making authority of nurses is acknowledged and incorporated as the norm. Also problematic are the unique relationships hospitals have with physicians and conflicts among the hospital management (Dempsey, & Larson, 2004; Cohen, 2003). Cohen (2003) offered three team-building strategies for developing teamwork in healthcare that seem to apply well here. He suggests that teams meet regularly and frequently with team-building sessions that an emphasize contributions to the larger organizational picture and highlight the talents and skills of team members.

Lastly, focus groups formed from cross-divisions could include a mix of leaders and staff from a variety of teams and departments within a hospital. The hospital should ensure unrestricted access to structured forums, such as committees that review expectations and processes and structures and makes the time needed available. The purpose of the focus groups would be to solicit information about departmental team issues and how it relates to the clarity of
structures for improvement initiatives. These focus groups can offer a wealth of information for training departments such as the development of some baseline of measurement with clear targets for improvement. This goal could be discussed in committees, forums or training programs that are already designed to improve team performance and the clarity of structure. Specific assignments for research or learning could be given to each manager. Initiatives could include various forms of measurement, using nurse managers as catalysts, involving physicians in planning, developing focus groups, and education through training and development and department specific team-building efforts.

Finally, the results and conclusions suggest some importance in the environmental empowerment scale that lead to some important implications. Once the clear structures and team accountability were combined, the scale itself became a more useful one because of its increased reliability and validity not only as a separate scale but as a scale that is now specific to the critical care nursing context. This suggests that it can be used in future research, classroom activities, trainings and management training.

This research takes an initial step toward examining the relationships between environmental empowerment, psychological empowerment and psychological strain. The findings are consistent with the proposed hypothesis that increased empowerment is associated with reduced strain and with the notion that the environment is a good predictor of nursing strain. These are interesting and the implications are significant in that strain has been associated with performance and patient safety.

**Recommendations**

The hope is that by clarifying these relationships, more hospital scholars will embark on substantial research addressing the dynamics of empowerment in the workplace. Furthermore,
the hope is that these research findings will provide guidance to nurse management. This was a convenience sample and normally researchers would use this section to suggest that this was a limitation that should be remedied by sampling a similar population. It can also be argued however, that relocating this study would require another sample of critical care nurses. Gaining access to this population however, would almost always require hospital support and critical care nurse population are almost always fairly small. The argument has been made that a convenience sample can provide as useful results as a random sample as long as the demographics are compared and found to be similar. That being said, researchers are encouraged to replicate this study in other hospitals in a similar way. In order to expand on the research and to use random sampling, it could be beneficial to randomly sample several hospitals in a chosen region.

Future research should address the limitations of a convenience sample by replicating this study in other similar populations. This should not be difficult given the clear description of the population and the national standards that define critical care nursing. If the findings continue to be consistent, this will provide a base from which to support training and educational programs. Future research might examine the relationship of empowerment to other outcomes including behavioral outcomes such as absenteeism, turnover, patient safety and the length of time to process patients. Because of cross-sectional design of the research, we cannot assess true causality, but rather associations between the variables of interest (Spreitzer, 1996). It may be that the direction of causality is reversed; strain may actually influence an individual’s sense of empowerment, rather the reverse.

Future research might assess the nurse’s experience of empowerment at one point in time and then their strain at a later point in time. Though this examination of individual outcomes builds on and extends prior research on empowerment, it suggests a number of questions for
future research. First, this research limited its focus to a key anticipated outcomes of empowerment. Though strain is considered key criteria for evaluating individuals in work settings, future research must examine the relationship of empowerment to other outcomes including behavioral outcomes, such as creativity and organization citizenship, and to organizational outcomes, such as absenteeism, quality or customer satisfaction. More sophisticated analyses, such as structural equation modeling that examine many different dependent variables simultaneously, are also warranted. It is also recommended that while the original three-factor structure was supported, the factor loadings were different and it is important that factor analysis be completed again on new samples in order to make accurate interpretations and to improve the scale.
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APPENDICES
A. Confidentiality Notice Attached to Survey and Given to Managers
B. Demographics
C. Psychological Empowerment Scale
D. Environmental Empowerment Scale
E. Psychological Strain Scale
F. Initial Email Letter
G. Initial Survey Letter
H. Consent to participate
I. Reminder Email Letter
J. Permission Letter to Use Spreitzer’s Scale
K. Permission Letter from Blanchard Company
L. Permission Letter from PAR
M. Correlations for Environmental Empowerment Items by Factor Pattern
N. Coefficient alpha results for 2, 3 and 4 factor models before and after item removal
Appendix A

Confidentiality Notice Attached to Survey and Given to Managers

Confidentiality will be maintained by allowing participants to anonymously complete and return the surveys to my home address. I will ensure that no un-authorized persons have access to the information. There will be no assistants helping me with the study and all data will remain in my home until the data is destroyed.

No personal identification will be connected to the survey and therefore no one will know who did or did not complete the survey. Each survey will be numbered so that no identifying information will be included on the survey (for tracking purposes). I will use a detachable section of the questionnaire with a closely guarded pre-printed code.

While the hospital contact person is aware of the study and knows whom the critical care nurses are, she will not have knowledge of who participated and who did not. Additionally, the data will not be broken into departments, which could then identify participants.

Once the data is recorded, the actual survey will be destroyed immediately. I will not know the identity of any participants who complete the study. Once the primary data collection period is complete, I may take a small random sample from non-participants to survey, therefore knowing the identity at the point of sending the survey but I will not know the identity of those that responded. NC State approved this in the spring of 2006 and by the hospital in August of 2005.
## Appendix B

### Demographics Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Your written answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is your age?</td>
<td></td>
</tr>
<tr>
<td>How many total numbers of years have you been working in any critical care environment?</td>
<td></td>
</tr>
<tr>
<td>How many years have you worked on the present critical care unit?</td>
<td></td>
</tr>
<tr>
<td>Circle whether you are a male or female.</td>
<td>Male</td>
</tr>
<tr>
<td>Circle whether you are Full-time or Part-time.</td>
<td>Female</td>
</tr>
<tr>
<td>Circle whether you are Part-time or Full-time.</td>
<td></td>
</tr>
<tr>
<td>Circle whether you are a manager/supervisor (not including occasional charge nurse roles) or a regular staff nurse.</td>
<td></td>
</tr>
<tr>
<td>What is your nursing education? (i.e. RN, LPN, CCNP)</td>
<td></td>
</tr>
</tbody>
</table>
Appendix C
The Psychological Empowerment Scale

Directions:

If you have already completed this survey, please do not complete this one and discard.

Please respond to each statement below according to the following scale.

<table>
<thead>
<tr>
<th>#</th>
<th>Psychological Empowerment Scale Spreitzer, 1995 M=Meaning C=Competence S=Self-determination I=Impact</th>
<th>Disagree Strongly</th>
<th>Neutral</th>
<th>Agree Strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>M 1.</td>
<td>“The work I do is meaningful.”</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M 2.</td>
<td>“The work I do is very important to me.”</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M 3.</td>
<td>“My job activities are personally meaningful to me.”</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
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<tr>
<td>C 4.</td>
<td>“I am confident about my ability to do my job.”</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C 5.</td>
<td>“I am self-assured about my capability to perform my work.”</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C 6.</td>
<td>“I have mastered the skills necessary for my job.”</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S 7.</td>
<td>“I have significant autonomy in determining how I do my job.”</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S 8.</td>
<td>“I can decide on my own how to go about doing my work.”</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S 9.</td>
<td>“I have considerable opportunity for independence and freedom in how I do my job.”</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I 10.</td>
<td>“My impact on what happens in my department in large.”</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I 11.</td>
<td>“I have a great deal of control over what happens in my department.”</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I 12.</td>
<td>“I have significant influence over what happens in my department.”</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
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</tbody>
</table>
Appendix D

Environmental Empowerment Scale

<table>
<thead>
<tr>
<th>#</th>
<th>Environmental Empowerment Scale</th>
<th>Almost</th>
<th>Almost</th>
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<tbody>
<tr>
<td></td>
<td>Randolph &amp; Blanchard, 1997</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I=Information Sharing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C=Clear Structures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T=Team Accountability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i 1.</td>
<td>I receive the information needed to help me understand the performance of our organization.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>i 2.</td>
<td>I share information with others to help them understand the performance of our organization.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>i 3.</td>
<td>We demonstrate trust in people by sharing sensitive information about our organization’s performance.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>i 4.</td>
<td>When I need information about our organization’s performance, it is readily available for me to access</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>i 5.</td>
<td>When mistakes are made, we focus on correcting the problem—not on whom to blame.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>i 6.</td>
<td>When mistakes are made, we try to learn from them.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>i 7.</td>
<td>People in our organization receive information about the organization’s performance in a timely fashion</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>i 8.</td>
<td>We share information about organizational performance so that people can act responsibly to improve performance.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>i 9.</td>
<td>We share information in ways that break down traditional, hierarchical thinking</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>i 10.</td>
<td>We get information into the hands of all our people, so they can make responsible decisions.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>C 11.</td>
<td>We share a common vision for our organization at all levels of the organization Almost always</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>C 12.</td>
<td>In our organization, we strive to live up to our vision.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>C 13.</td>
<td>We work together to translate the vision into specific goals and timelines for everyone in the organization.</td>
<td>1 2 3 4 5 6 7</td>
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<tr>
<td>C</td>
<td>14. We create new structures policies, and practices that help people use their knowledge and motivation.</td>
<td>1</td>
<td>2</td>
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<tr>
<td>C</td>
<td>15. We create structures and procedures that encourage people and we expect them to take initiative in improving organizational performance</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>16. We create structures and procedures that encourage people and we expect them to take initiative in improving organizational performance.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>17. We set high standards in our organization and tolerate nothing but continuous performance improvement.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>18. We use structures and guidelines to help people learn to act with responsibility and autonomy</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>19. We work together to make everyone accountable for his or her actions and for results in the organization.</td>
<td>1</td>
<td>2</td>
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<tr>
<td>C</td>
<td>20. We use our performance appraisal process/system to promote a sense of partnership between people at all levels of the organization.</td>
<td>1</td>
<td>2</td>
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<tr>
<td>T</td>
<td>21. We assume as the focal point of responsibility and accountability in our organization.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>T</td>
<td>22. In our organization, teams now make many of the decisions that management used to make.</td>
<td>1</td>
<td>2</td>
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<tr>
<td>T</td>
<td>23. We act as though the diversity of people in our organization is an asset rather than something that must be managed.</td>
<td>1</td>
<td>2</td>
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<tr>
<td>T</td>
<td>24. We provide team and individual training that helps teams operate more efficiently.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>T</td>
<td>25. We work hard in our organization to develop effective, self-directed teams.</td>
<td>1</td>
<td>2</td>
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<tr>
<td>T</td>
<td>26. Our teams act as though they “want to improve” organizational performance, not as though “someone has told them they have to improve”.</td>
<td>1</td>
<td>2</td>
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<tr>
<td>T</td>
<td>27. Teams feel a keen sense of responsibility for the organizations cost effectiveness and quality of operations.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>T</td>
<td>28. Teams place significant importance on being flexible in providing outstanding customer service.</td>
<td>1</td>
<td>2</td>
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<tr>
<td>T</td>
<td>29.</td>
<td>Teams recognize there will be some tough times and are prepared to handle them.</td>
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<td>--------------------------------------------------------------------------------</td>
<td></td>
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<tr>
<td>T</td>
<td>30.</td>
<td>We see examples of leadership being exhibited by people throughout our organization.</td>
<td></td>
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<th></th>
<th>1</th>
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</table>
Appendix E

Psychological Strain

<table>
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<tr>
<th>#</th>
<th>Psychological Strain Scale</th>
<th>Rarely</th>
<th>Most of the time</th>
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<td>ST</td>
<td>Psychological Strain Scale</td>
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<tr>
<td></td>
<td>Osipow, 2001</td>
<td></td>
<td></td>
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<tr>
<td>ST</td>
<td>ST=Strain</td>
<td></td>
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<tr>
<td></td>
<td>1. I am easily irritated.</td>
<td>1</td>
<td>2 3 4 5</td>
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<tr>
<td>ST</td>
<td>2. I have been depressed.</td>
<td>1</td>
<td>2 3 4 5</td>
</tr>
<tr>
<td>ST</td>
<td>3. I have been feeling anxious.</td>
<td>1</td>
<td>2 3 4 5</td>
</tr>
<tr>
<td>ST</td>
<td>4. I have been happy, lately.</td>
<td>1</td>
<td>2 3 4 5</td>
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<tr>
<td>ST</td>
<td>5. So many thoughts run through my head at night that I have trouble falling asleep.</td>
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<td>2 3 4 5</td>
</tr>
<tr>
<td>ST</td>
<td>6. I respond badly in situations that normally would not bother me.</td>
<td>1</td>
<td>2 3 4 5</td>
</tr>
<tr>
<td>ST</td>
<td>7. I find myself complaining about little things.</td>
<td>1</td>
<td>2 3 4 5</td>
</tr>
<tr>
<td>ST</td>
<td>8. I have been worrying.</td>
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<td>2 3 4 5</td>
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<td>ST</td>
<td>9. I have a good sense of humor.</td>
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<td>ST</td>
<td>10. Things are going about, as they should.</td>
<td>1</td>
<td>2 3 4 5</td>
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Appendix F
Initial email letter

Dear Critical Care Nurse,

In a few weeks, I will meet with you and your department to discuss a study I am doing about critical care nurse’s work environment and how it affects psychological strain. I need your help to research this important topic about your work and well being.

This survey will ask a variety of questions about your attitudes toward your job, your perceptions of leadership within the organization, and some questions about your well-being. I am asking you to look over the questionnaire and, if you choose to do so, complete the questionnaire and send it back to me. This study is voluntary and confidential and no identifying information will be on your survey. Only I will have access to the data and each survey will be destroyed once it is in the database. I will give you a copy of confidentiality information and consent to participate when I send the survey.

The results of this project will be summarized and you will be given a summary report. In this report, neither nursing unit nor individual nurse will be identified. I guarantee that your responses will not be identified with you personally nor will any other nurse or hospital staff be aware of how you have responded. In addition, nothing you do or say will in any way influence your present or future employment.

If you have any questions or concerns about completing the questionnaire or about being in this study, you may contact me at (919)-841-0903 or at sannem@fhahelps.com. If you have any questions about your rights as a research subject, or if you are not satisfied with the manner in which this study is being conducted, you may contact (anonymously if you choose) the IRB Chairman of the hospital through the Committee office.

Sincerely,

Sanne H. Martin, MSW, LCSW
Appendix G

Initial Survey Letter

Dear Critical Care Nurse,

A few weeks ago, I emailed you and met with your department to inform you that I would be sending a survey for my study. I hope you will take a few minutes to complete this survey and return it in the enclosed self-addressed and stamped envelope. I need your help and would appreciate your participation in this study.

This survey will ask a variety of questions about your attitudes toward your job, your perceptions of leadership within the organization, and some questions about your well being. I am asking you to look over the questionnaire and, if you choose to do so, complete the questionnaire and send it back to me.

The results of this project will be summarized and you will be given a summary report. In this report, neither nursing unit nor individual nurse will be identified. I guarantee that your responses will not be identified with you personally nor will any other nurse or hospital staff be aware of how you have responded. In addition, nothing you do or say will in any way influence your present or future employment.

If you have any questions or concerns about completing the questionnaire or about being in this study, you may contact me at (919)-841-0903 or at sannem@fhahelps.com. If you have any questions about your rights as a research subject, or if you are not satisfied with the manner in which this study is being conducted, you may contact (anonymously if you choose) the IRB Chairman through the Committee office at the hospital.

Sincerely,

Sanne H. Martin, MSW, LCSW
CONSENT TO PARTICIPATE

Faculty Sponsor:  xyz

INCLUSION CRITERIA:
This study will include all critical care nurses at the hospital.

VOLUNTARY PARTICIPATION:
You hereby freely and voluntarily consent to participate in the study described above. This consent is given based on verbal and written information provided to you and on the understanding that you are medically and physically qualified to participate in this study. You understand that you do not have to participate in this study and that choosing not to participate will not effect your current or future employment.

RIGHT TO WITHDRAW FROM STUDY:
You acknowledge that your participation is voluntary. You have been told that you are able to withdraw your consent and authorization to stop your participation in this study at any time, and that if you do so it will not affect your current or future employment.

CONFIDENTIALITY:
Allowing participants return the survey to my home address rather than giving it to any hospital staff will maintain confidentiality. Additionally, each survey will be numbered so that no identifying information will be included on the survey. No other person other than me will have access to any individual survey. The hospital contact person is aware of the study and knows who the critical care nurses are but will not have knowledge of who participated and who did not. Additionally, the data will not be broken into departments, which could then identify participants. While Dr. Miriam Rogers oversees the study, she will not have access to any of the surveys. In addition, nothing you do or say will in any way influence your present or future employment with Wake Med.

INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL:
The Institutional Review Board (IRB) at the hospital has reviewed the protocol for this project in the context of certain federal laws relating to research and experimentation involving human subjects. Approval of this protocol by the hospital’s IRB does not constitute an endorsement of this project or its consequences.

CONTACTS:
If you have any questions about the study, you may contact Sanne H. Martin (sannem@fhahelps.com. If you have any questions about your rights as a research subject, or if
you are not satisfied with the manner in which this study is being conducted, you may contact (anonymously if you choose) the IRB Chairman through the Committee office at the hospital.

**STUDY SUBJECT’S AGREEMENT:**
I have read the information provided in this consent form, and have been given the opportunity to ask any questions concerning the study. I will receive a signed copy of this informed consent. By returning the survey, I have agreed to participate in this voluntary survey.
Appendix I
Reminder Email

Dear Critical Care Nurse,

Within the past three weeks, I have emailed you, met with your department and sent you a survey. I want to thank all of you who have participated in the study. If you have not yet completed the survey I mailed you, it is not too late. I hope you will consider completing the survey and participating in this study that is so important to you and your jobs.

If you have any questions about your rights as a research subject, or if you are not satisfied with the manner in which this study is being conducted, you may contact (anonymously if you choose) the NC State University IRB Chairman, Dr. Timothy Hatcher, at (919) 515-6246. You may contact me at my home at (919)-841-0903 or by email at sannem@fhahelps.com or you can contact the IRB chair at the hospital.

Sincerely,

Sanne H. Martin, MSW, LCSW
Appendix J

Permission Letter from Dr. Spreitzer

Gretchen M. Spreitzer
Professor of Management and Organizations

Stephen M. Ross School of Business
University of Michigan
701 Tappan Street, Room E2550
Ann Arbor, Michigan 48109-1234
Tel 734.936.2835 Fax 734.615.4323
spreitzer@umich.edu
http://webuser.bus.umich.edu/spreitzer/

August 2, 2005

Ms. Sanne Martin
North Carolina State University
1901 Whittington Dr.
Raleigh, NC 27614

Dear Ms. Martin,

You have my permission to use my psychological empowerment scale for your research. There is no charge for use of the instrument. Please do share your findings with me.

Sincerely,

Gretchen M. Spreitzer
Department of Management and Organizations
Stephen M. Ross School of Business at the University of Michigan
Ann Arbor, MI 48109-1234
February 8, 2005

Sanne H. Martin, MSW, LCSW, Doctoral Student
Director of Training and Organizational Development
Frank Horton Associates, LLC
3200 Beechleaf Court, Suite 100
Raleigh, NC 27604

Dear Sanne H. Martin:

The Ken Blanchard Companies is pleased to grant you permission to use the Empowerment Barometer, as requested, in your dissertation.

The following language is acceptable for acknowledgement:

“The Empowerment Barometer is used with written permission from The Ken Blanchard Companies”

Should you have any questions regarding this letter or the permission granted, please feel free to contact me at 800-728-6000, 5884.

Best regards,

Lori Strahm
Contract Coordinator, Paralegal

Global Headquarters 125 State Place, Escondido, CA 92029
760-489-5005 • 800-728-6000 • 760-489-8407 (fax) • www.kenblanchard.com
Appendix L

Permission Letter from PAR

Sanne Martin
1901 Whittington Dr.
Raleigh NC 27614

Friday, August 12, 2005

Dear Ms. Sanne Martin,

This letter is to acknowledge that PAR has granted you, Sanne Martin, permission to use the OSI-R in your dissertation research, provided that you are under the supervision of Mr. Timothy Hatcher. Thank you for your interest in the PAR products.

Best Regards

Ketia Laurent
Customer Support Specialist
Psychological Assessment Resources
Phone 1.800.331.8378
Fax 1.800.737.9329
klaurent@parinc.com
Appendix M

Correlations for Environmental Empowerment Items by Factor Pattern

### Factor 1 Item Correlations

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# Appendix N

Coefficient Alpha results for 2, 3 and 4 Factor Models Before and After Item Removal

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