

2010

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RELATIONSHIPS AMONG JOB DEMAND, JOB CONTROL,
SOCIAL SUPPORT AND JOB STRESS IN REGISTERED NURSES
WORKING IN SKILLED NURSING FACILITIES

by

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A dissertation submitted to the

Graduate School-Newark

Rutgers, the State University of New Jersey

in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

Graduate Program in Nursing

written under the direction of

Linda Flynn, PhD, RN, FAAN

and approved by

Newark, New Jersey

May, 2010

ABSTRACT OF THE DISSERTATION

Relationships among Job Demand, Job Control, Social Support and Job Stress in

Registered Nurses Working in Skilled Nursing Facility

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Job stress has been recognized as a major risk factor for the development of serious physiological and psychological problems among employees of modern work organizations including health care institutions. Conditions in the workplace, such as increasing job demands, a lack of control over work situations, and a lack of positive human connections contribute to the negative emotional reactions or job stress among employees. The purpose of this study was to investigate the relationship between these factors and job stress in a sample of registered nurses working in skilled nursing facility.

Using a cross-sectional design, this study examined the relationship between psychological and physical job demand, job control, social support and job stress in a sample of 158 male and female staff nurses recruited on-site at nine (9) licensed nursing homes in NY and NJ counties. The Job Stress Scale, the JCQ Psychological and Physical Job Demand Scale, the JCQ Decision Latitude Scale, and the JCQ Social Support Scale were used to measure these variables.

Job stress was positively related to psychological and physical job demands, $r = .587$, $p < .01$ and $r = .412$, $p < .01$, respectively, inversely related to social support, $r = -.365$, $p < .01$, and was not significantly related to job control, $r = -.072$, $p = .37$. A two- step hierarchical regression analysis revealed that job control did not moderate the relationship between psychological and physical job demand and job stress, $\beta = .031$, $p = .641$ and $\beta = .054$, $p = .462$, respectively, and social support did not moderate the relationship between psychological and physical job demand and job stress, $\beta = -.053$, $p = .415$, and $\beta = .066$, $p = .351$, respectively. Additional findings revealed that supervisor support reduces job stress through the reduction of psychological job demand.

These findings suggest the role of psychological job demand as a significant predictor of job stress and the role of supervisor support in ameliorating job stress among staff nurses working in skilled nursing facilities. Work redesign plans need to include assessment and implementation of interventions aimed at enhancing supervisor support that maybe helpful in ameliorating job stress among staff nurses working in skilled nursing facilities.

ACKNOWLEDGEMENTS

The completion of this research was made possible by the support and guidance of those who willingly shared their knowledge and expertise in different ways. First and foremost, I thank God for giving me light and endurance to finish what I have started. Secondly, I thank my family for helping out at home, my husband Toribio for escorting me during library trips at night, my son Jason for technical support, my daughter Fleur for taking more domestic responsibilities, and my son-in-law Ray for making my connections with Directors of Nursing easier. I also thank my parents, Evan and Clemencia Awen, for lessons learned regarding pursuit of knowledge and education.

To Dr. Linda Flynn, my chairperson and mentor, whose patience is unparalleled by anyone I know, I am lucky to have you as an advisor and I am eternally grateful for all that you have done. I thank Dr. Charlotte Thomas-Hawkins whose opinion I respected as I know will lead me to the right direction. I thank Dr. Claudia Beckman for her insightful questions and comments and Dr. Susan Schurman for her practical suggestions and expertise on the matter. Most of all, I thank the whole committee for being there whenever needed and become an integral part of the process. I hope I made you all proud and I hope to be able to work with you again in the future.

Last, but not the least, I would like to thank Marie Ankner, Dan Moles, Elinor Fritz, all the nursing homes Directors of Nursing, and Administrators who facilitated my recruitment of participants despite their busy schedule. Their enthusiasm to help and participate in this study made it possible for me to reach as many staff nurses as possible. To them, I am forever indebted.

This research is dedicated to my co-workers and to all staff nurses working in nursing homes who participated in this study and whose actions and dedication make a difference in the lives of nursing home residents under their care. May we strive to continue to provide a pleasant and safe home environment for the residents by creating a wholesome and safe work environment for the nurses caring for them.

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Chapter I

The Problem

The influence of job stress on organizational and worker outcomes continues to gain increased recognition with the advancement of technology, globalization of work, demographic trends, constantly changing work roles and expectations, and increasing work demands (Beehr & Glazer, 2005; Cooper, Schabracq & Winnubst, 1996; Karoly & Panis, 2004). Job stress refers to a state of negative feelings or reaction resulting from perceived undesirable work conditions that pose a threat to the individual (Jamal, 2007; Kahn & Byosiere, 1990; Karasek, 1979; 1997; Parker & DeCotiis, 1983; Xie & Johns, 1995).

A focus on short-term fiscal performance and cost-containment has created a management philosophy throughout much of the corporate and service sectors including the healthcare industry, which places much value on increased productivity and revenues, but seems to place less value on the product, quality of services, or the workers (IOM, 2004; Karoly & Panis, 2004; Maslach & Leiter, 1997). Consequently, with increased work demands and managerial scrutiny, today's employees are experiencing feelings of work overload and a lack of control over the job. Moreover, there is an increasing breakdown in community at work, as workers, including healthcare professionals, are simply too busy to maintain a positive connection with others in the workplace. Similarly, registered nurses (RNs) practicing in skilled nursing facilities also experience changing work roles and subjective work environment potentially exposing them to the deleterious long-term effects of job stress (Cohen-Mansfield, 1995; McVicar, 2003; Schaeffer & Moos, 1993).

Theories posit that high job demand trigger a state of negative emotions or feelings and, therefore have a direct and positive relationship with job stress (Lovallo, 2005; Parker & DeCotiis, 1983; Payne, 1979). In contrast, theory posits that job control, also labeled decision latitude, not only has a direct negative relationship with job stress but also, moderates the effects of high demands on job stress (French, Lenton, Walters & Eyles, 2000; Karasek, 1979; 1997; Spector, 1998; 2002). Social support at work is also theorized to have a direct negative relationship with job stress and to moderate the effects of high job demands on the feelings of job stress (Hall, 2007; House, 1981; Johnson, 1989; Theorell & Karasek, 1996).

There have been no studies, however, that have tested these theoretical relationships among RN's who practice in the nation's nursing homes. Consequently, this study will test the relationships among (1) job demand; (2) job control; (3) social support; and (4) job stress in a sample of RNs working in skilled nursing facilities.

Statement of the Problem

What are the relationships among job demand, job control, social support at work, and feelings of job stress in registered nurses practicing in skilled nursing facilities?

Sub-Problems

1. Is increased job demand related to increased feelings of job stress in registered nurses?
2. Is increased job control related to decreased feelings of job stress in registered nurses?
3. Is social support at work related to decreased feelings of job stress in registered nurses?

4. Will job control moderate the relationship between job demand and feelings of job stress in registered nurses?
5. Will social support at work moderate the relationship between job demand and feelings of job stress in registered nurses?

Definition of Terms

Job stress, for the purposes of this study, will be theoretically defined as one's internal state or feelings of unpleasant emotions or reactions resulting from perceived undesirable work conditions that pose a threat to the individual (Jamal, 2007; Kahn & Byosiere, 1990; Parker & DeCotiis, 1983; Xie & Johns, 1995). Job stress will be operationally defined as the subject's total score on the Job Stress Scale (Parker & DeCotiis, 1983).

Job demand will be theoretically defined as employment-related task requirements or workload, psychological and physical in nature, requiring cognitive arousal, mental awareness, a static or physical exertion (Karasek, 1979; Karasek & Theorell, 1990; Karasek et al., 1998). Job demands will be operationally defined as the subject's total scores on the psychological demand scale and on the physical demand scale of the Job Content Questionnaire (Karasek et al., 1998).

Job control or decision latitude will be theoretically defined as a worker's control over the performance of his or her job, which includes the ability to decide what skills to use to complete the job, autonomy, and opportunity to influence organizational-level issues and decisions (Karasek, 1979; Karasek & Theorell, 1990). Job control will be operationally defined as the subject's total score on the decision latitude scale of the Job Content Questionnaire (Karasek et al., 1998).

Work-related social support will be theoretically defined as the psychosocial factors or acts provided through relationships with other employees at work, such as emotional, instrumental, informational, and appraisal support from supervisor and co-workers (House, 1981). Work-related social support will be operationally defined as the subject's total score on the social support scale of the Job Content Questionnaire (Karasek et al., 1998).

Delimitation

The subjects are delimited to registered nurses who are permanent staff-level employees of state licensed skilled nursing facilities, who have worked in their facility for at least six months and who work at least 30 hours per week. To avoid measurement error, subjects should be able to speak and write in English including English as a second language.

Significance of the Study

The need to investigate job stress as the risk factor for the development of physiological and psychological problems among employees became a focus of concern by the US Public Health Service as early as the 1960's. The National Institute of Occupational Safety and Health (NIOSH) reiterated this need in the 1980's, reporting musculoskeletal disorders, cardiovascular diseases and psychological disorders, many of which were associated with job stress, as among the top leading occupational health problems (APA, 2002; Ordin, 1992; Rogers, 1994).

Studies show the predictive ability of job stress in explaining increase in health care costs (Ganster, Fox & Dwyer, 2001; Manning, Jackson & Fusilier, 1996). The monetary cost of health impairments associated with modifiable psychosocial work

environment is borne by the worker, the employer, and society at large. The actual cost of stress-related expenditure is estimated to increase annually due to unstable growth in total health care spending in the US which now amounts to \$2.1 trillion or \$7,026 per person representing a 16% consumption of Gross Domestic Product in 2006 (Caitlin, Cowan, Hartman & Heffler, 2008). An estimated 90% of doctors' visits include symptoms related to stress (Manning et al., 1996; Stress Linked, 2002). In addition, workers' stress contributes to 10% reduction in overall productivity due to employees decline in performance (Manning et al., 1996), absenteeism estimated at an average of 25 days annually (NIOSH, 2004), turnover rate of 40%, and an increase in accidents and job injuries estimated to reach 60% to 80% of total (American Institute of Stress, n.d.).

The health care workers including registered nurses are no exception to the potentially damaging effects of job stress. The incidence of occupational burnout, a serious stress-induced psychological phenomenon that culminates in somatic symptoms, is estimated to affect 30% to 50% of practicing registered nurses (Aiken, Clarke & Sloane, 2002; Flynn, Thomas-Hawkins, & Clarke, 2009; Gelsema et al., 2006; Jamal & Baba, 2000; Wu, Zhu, Wang, Wang & Lan, 2007) including those in nursing homes (Flynn, 2007; Ross, Carswell & Dalziel, 2002). In addition, increased health-risk behaviors, increased incidence of accidents and injuries, diminished performance, reduced productivity and quality of work, absenteeism and turnover have been linked to job stress (AbuAlRub, 2004; Hellerstedt & Jeffery, 1997; Karsh, Booske & Sainfort, 2005; Searle, Newell & Bright, 2001; Taris, Schreurs & Van Iersel- Van Silfhout, 2001; Verhaeghe, Mak, Van Maele, Kornitzer & De Backer, 2003). Most importantly, job stress has been associated with the frequency of patient safety –related incidents such as

incorrect documentation, near misses in medication errors and delays in delivery of patient care (Elfering, Semmer & Grebner, 2006).

Optimizing the environment, which includes the professional nurse and all that surrounds the client, is central to the concept of nursing (Meleis, 1997). The discipline of nursing has historically been among the occupational health professions that consider the design of interventions to reduce risk factors in the work environment, which include job stress, to be within their purview (Staun & Wolff, 2003). However, the theoretical relationships among work-related factors and job stress must first be tested and quantified.

Research indicates that registered nurses working in skilled nursing facilities are at risk for high job demand, or workload, and job stress-related injuries and illness (Flynn, 2007; Trinkoff, Johantgen, Muntaner & Le, 2005). Yet, theories propose that increased job control and social support at work can moderate the effects of job demand on the perception of job stress. Fortunately, job control and social support at work are characteristics of the work environment that are amenable to change and can be enhanced through managerial or administrative initiatives. Unfortunately, there have been no studies testing the theorized relationships among job demand, job control, social support at work, and perceived job stress among registered nurses practicing in skilled nursing facilities. Moderating effects of job control and social support at work on the relationship between job demand and the perception of stress will provide much needed knowledge to occupational health nurses and nursing home administrators, informing the redesign of jobs and work environments in ways that promote health of registered nurses who

practice in skilled nursing facilities. Therefore, this study will investigate these relationships, and address this gap in the scientific literature.

Chapter II

Review of Literature

This proposed research investigates the relationships among job demand, job control, social support, and job stress. Theoretical and empirical literatures relevant to these relationships are presented in this chapter. Older citations are seminal work and more recent studies are needed.

The first section presents the theoretical literature relative to the dependent variable of job stress. Secondly, the theoretical literature explaining job demand will be presented, followed by empirical support for the relationship between job demand and job stress. Next is a review of the theoretical literature related to job control, followed by empirical support for the relationship between job control and job stress. Following, the theoretical literature regarding work-related social support will be presented, as well as empirical support for the relationship between work-related social support and job stress. Lastly, gaps in the empirical literatures are identified, the theoretical rationales for the research questions are summarized, and the study hypotheses are outlined.

Theories of job stress

Interest on the influence of job stress on organizational and workers' outcomes continues to grow with constantly changing work roles and expectations, advancement in technology and increasing work demands in health care industry (Beehr & Glazer, 2005; Cooper et al., 1996). Job stress refers to a state in which one's feeling of unpleasant emotions or reactions resulting from perceived undesirable conditions in the work environment pose a threat to the individual (Apply & Trumbull, 1987; Lovallo, 2005; Parker & DeCotiis, 1983; Xie & Johns, 1995). Job related factors interact with the

individual, changing his or her psychological and physiological condition, and thus, result in deviations from the worker's normal functioning (Arnold, 1967; Beehr & Newman, 1978; Clegg, 2001; Jamal, 2007).

Physiological changes resulting from job stress are explained by the "Fight or flight response mechanism of stress reaction" (Cannon, 1929) and by the General Adaptation Syndrome or GAS, (Selye, 1976), the two biological perspectives of stress theory which view stress as a non-specific response to physical or psychological noxious stimulus in the environment. The GAS theory states that when exposed to certain levels of demand, the individual responds with some degree of immediate and reflexive physical, physiological and psychological reactions. Negative emotions such as tension, aggression, frustration, fear and work-related anxiety, are examples of these psychological reactions (Payne, 1999; Selye, 1976). The degree of emotional responses is influenced by the perceived intensity and frequency of the stimulus, the period of exposure and individual's ability to adapt to the demands (Lovallo, 2005; Quick, Cooper, Nelson, Quick & Gavin, 2003). As the demand continues, general adaptation follows where resistance to the stressors occurs, and although symptoms of the initial response are abated, physiological changes persist. Continued exposure to the demand causes diminished resistance leading to exhaustion of the individual.

According to the GAS theory, sources of stress originate from the environment, including the workplace. Stress produced by these work-related factors is frequently labeled job stress, to identify the source or origin. Selye (1976) specifically explained that working with critically ill and / or difficult patients is a source of job stress for health care professionals including nursing. Additional sources of job stress identified by other

theorists include physical working conditions such as noise, organizational factors such as resource availability, characteristics of work itself such as job demands, low job control, role ambiguity and role conflict, and social climate at work such as interaction with supervisors, co-workers and nursing home patients and families (Cohen-Mansfield, 1995; Fletcher, 1988; House, 1981, 1987; Kahn & Byosiere, 1990; Payne, 1999; Spector, 1998).

In addition to Selye's (1976) physiologically focused reflexive response explanation of stress, other theorists have focused on the psychological aspects of stress. These theorists posit that stress occurs when individuals perceive a demand and appraise an imbalance between the encountered environmental demands, including job demands, and their response capability (Beehr & Newman, 1978; Burrows & McGrath, 2000; Kinman & Jones, 2005; McGrath, 1970). Specifically, McGrath defines stress as an emotional reaction arising from dynamic interaction between the individual and the environment, wherein the individual appraises an imbalance between environmental demands, including job demands, and their own response capability. McGrath further explains that the sequence of events in the stress process is cyclical and occurs over a period of time. The Person-Environment fit model, an example of job stress model developed from this theoretical underpinning, proposes that job stress occurs when there is an incongruence, or "bad fit" between the characteristics of the worker and the characteristics and demands of the work environment (French, Caplan & Van Harrison, 1982). The model explains that the greater the misfit between the work requirements or demands and the abilities of the person to meet those demands, the greater the psychological stress experienced by the individual.

Hobfoll (1988, 1989) expands upon these explanations of stress, and introduces the role of resources in exacerbating or diminishing stress. The theorist explains that resources have instrumental and symbolic value to people such as a home which is an object providing shelter, a condition such as seniority, personal characteristics such as optimism or positive outlook, and energies such as knowledge, money or skills. Hobfoll (1989) proposes that both perceived and actual losses of resources are sufficient to produce stress, that individuals strive to minimize net loss of resources during stress, and that individuals strive to gain surplus of resources when not experiencing stress. He proposes that when presented with excessive environmental demands, the individual will evaluate available resources and may change the appraisal of the threat depending upon the sufficiency of available resources. The individual with greater resources and less resource loss is considered to be stress resistant.

From Hobfoll's original theory, the Job Demand-Resources Model was later developed to specifically explain the role of resources in mitigating job stress (Hobfoll & Shirom, 1993, 2001). The model specifically identifies several types of resources that may be used to buffer the effects of job demands on stress. The model posits that job stress may be reduced by the availability of job-related resources, including work-related social support and job autonomy, also labeled job control (Bakker, Demerouti, Hakanen & Xanthopoulou, 2007; Demerouti, Bakker, Nachreiner & Schaufeli, 2001; Hobfoll & Shirom, 1993, 2001; Noblet, Rodwell & McWilliams, 2006).

Perhaps the most well known and most frequently cited explanation of job stress is the Job - Demand- Job Control Model developed by Karasek (1979). High job demands and low job control are two job characteristics that Karasek identifies as triggers

of the state of stress. The model explains that high job demands triggers the reactions of stress and strain, and that this stress reaction can be moderated by high job control.

Karasek (1979; 1997) further proposes that having low job control in situations of high job demands increases the feelings of stress.

Johnson and Hall (1988) expanded the Job Demand – Job Control model to include social support in the workplace. The Job Demand/ Job Control/Social Support Model is a comprehensive, integrated, interdisciplinary set of theories that explains the interactions among work characteristics and job stress (Israel, Schurman & House, 1991; Johnson, 1989; Karasek, 1997; Karasek & Theorell, 1990; Noblet et al., 2006; Theorell & Karasek, 1996). The model posits that social support in the workplace, also labeled work-related social support, likewise moderates the effect of high job demand on job stress. The Job Demand/ Job Control/Social Support Model proposes a positive relationship between job demand and job stress, an inverse relationship between job control and job stress, and an inverse relationship between work-related social support and job stress. Both job control and work-related social support are proposed to moderate the relationship between job demand and job stress. The descriptive and explanatory propositions of the model are presented in detail in subsequent sections of this chapter.

In summary, from a synthesis of theories, job stress is defined as one's internal state or feelings of emotions resulting from perceived undesirable work conditions that pose a threat to the individual leading a person to deviate from normal functioning (Apply & Trumbull, 1987; Beehr & Newman, 1978; Clegg, 2001; Karasek, 1979; Lovallo, 2005; Parker & DeCotiis, 1983; Xie & Johns, 1995;). These feelings are often described as unpleasant aversive or negative (Jamal, 2007; Parker & DeCotiis, 1983;

Sulsky & Smith, 2005). Although several organizational and work-related factors have been theorized to elicit a stress response, more recent theories focus on the role of specific job characteristics such as job demand, job control and work-related social support in the production or reduction of job stress. The Job Demand/ Job Control/Social Support Model propose that high job demand increases job stress, but that the relationship between job demand and job stress can be moderated by high job control and work-related social support (Israel et al., 1991; Johnson, 1989; Karasek, 1979, 1997; Karasek & Theorell, 1990; Theorell & Karasek, 1996).

Theories of job demand

In the early stages of the evolution of the concept, job demand was defined as a stimulus, coming from another person or from the physical work environment, that is imposed upon an employee and that commands the employee's attention or response. The stimulus was described as coming in the form of technical, intellectual, physical, social or financial challenges (Fletcher, 1991; Payne, 1979). Perrewe and Ganster (1989) expanded upon this conceptualization, classifying the properties of job demand as quantitative and qualitative. Quantitative demand refers to the amount of work that an individual need to accomplish in a given period of time. Qualitative demand refers to the complexity of work or level of required skills, abilities and knowledge of the individual to accomplish the job.

One of the most comprehensive theories of job demand has been developed as a key component of a multidimensional, interdisciplinary, integrated set of theories that describe and explain interactions within the psychosocial work environment and their impact upon workers' productivity, development, and health. In this set of integrated

theories, labeled the Job Demand/Control /Social Support Model, the theorists define job demand as employment-related task requirements or workload (Johnson & Hall, 1988; Johnson, 1989; Karasek & Theorell, 1990; Theorell & Karasek, 1996). Defined simply as ‘how hard workers work’ encompassing quantitative and qualitative demand, job demands include tasks described as psychological and physical in nature. Psychological job demand is defined as tasks that require cognitive arousal, mental alertness, and mental work, such as assessment and surveillance, information processing, problem solving, decision-making, synthesis and organization of information and activities, and coordination of information and activities. Organizational constraints such as task completion deadlines requiring the individual to maintain a rapid pace of activities, as well as assignment of conflicting tasks are also components of psychological job demands (Kahn & Byosiere, 1990; Karasek, 1979, 1997; Karasek & Theorell, 1990). Physical demand is defined as job- related tasks that require physical exertion such as lifting heavy loads, maintaining an awkward position for a prolonged period of time in order to accomplish a task, or maintenance of a rapid pace of activities. Theories propose that in the face of too many challenges, when job demands whether psychological or physical are high, the person experiences a condition of work overload forcing them to make use of reserve capacities or resources in an effort to maintain integrated functioning (Fletcher, 1988; Karasek, 1979, 1997; Karasek & Theorell, 1990; Schabracq, Cooper & Winnubst, 1996). Continuous use of reserve capacities taxes the resources and abilities of the individual resulting in job stress (Winnubst, De Jong & Schabracq, 1996).

Some tenets of the Demand/Control/Support Model that explain the effects of excessive job demands are derived directly from the General Adaptation Syndrome

(GAS) theory developed by Hans Selye (1976). These include the propositions that excessive job demand elicits an initial phase of stress response which produces a negative emotional state or psychological discomfort as well as biological reactions such as cortisol production (Karasek & Theorell, 1990; Lovallo, 2005). Although some adaptation to the demands may occur; the GAS and the Demand/Control Model propose that prolonged exposure, the subsequent experience of emotional distress, and ongoing attempts at coping or adaptation to the stress can eventually deplete the biological and psychological reserves of the individual. Due to depleted biological and psychological reserves, the individual then experiences decompensation and the concomitant deleterious psychological, physical and behavioral consequences.

The Job Demand/Control/Support Model (JDCS) expands upon Selye's theory and proposes that stress produced by high job demand is predominately a function of organizationally-designed structures, processes, systems, and constraints. Importantly, these stress-producing organizational characteristics are modifiable, can be altered by administrative redesign or initiatives, and vary in number and severity across organizations. Moreover, the JDCS model proposes that in contradistinction to many stressors encountered in an individual's personal life, stressors related to high job demand may be lower in intensity yet chronic in nature, occurring day in and day out for decades. The theorists propose that it is this chronic exposure to stress, produced by high job demand, that results in long-term negative psychological arousal and discomfort, as well as long-term activation of the neuro-chemical response contributing to anxiety, depression, fatigue, decreased mental functioning, diminished job satisfaction and the

possibility of cardiovascular, musculo-skeletal and somatic diseases (Karasek, 1979, 1997; Karasek & Theorell, 1990; Karasek et al., 1998).

Although not as comprehensive in scope as the JDCS model, other theories likewise posit the negative psychological effects of high job demand. Payne (1979) theorizes that job stress is created when work demands exceed support from relevant resources, or when organizational constraints prevent the worker from completing their task. He posits that the greater the level of demands, the greater the strain and stress to the individual. Kahn and Byosiere (1990) propose that in work overload, the individual is faced with a conflict of compromising quality of work over quantity or over time schedule especially when under time pressure. Job stress is highly indicated by negative affect and feelings of tension with inability to finish the job according to one's established goal.

In summary, theory defines job demand as employment-related psychological tasks requiring cognitive arousal and mental alertness (Karasek & Theorell, 1990; Perrewe & Ganster, 1989). Theories propose that job-related stress ensues when job demands, frequently exacerbated by environmental constraints and challenges, exceed the resources and abilities of the worker to accomplish the task. If not moderated, high job demand results in high job stress which in turn has the potential to influence impairment of the psychological and physical health of the worker via exhaustion, decompensation, and neuro-chemical responses (Kahn & Byosiere, 1990; Karasek, 1979, 1997; Karasek & Theorell, 1990; Payne, 1979). The JDCS model proposes, however, that high job demands and concomitant stress, as a function of organizational design and processes, are modifiable and vary across organizations (Karasek & Theorell).

Job demand and job stress: Empirical support

The relationship between job demand and job stress was studied by Schaubroeck, Lam & Xie (2000) among 207 Hong Kong bank tellers and 229 American bank tellers in a cross-national study. Sample mean age was 24.8 yrs. and 89% were female. There was no significant difference in age, education, gender or tenure between the two groups. Job stress was measured using the 15-item Job Stress Scale (Parker & DeCotiis, 1983), and by the 20-item Self-Rating Depression Scale (Zung, 1965). Job demand was measured using the 17-item job-demand scale (Caplan, Cobb, French, & Pinneau, 1975) measuring job demand as work pace, complexity, conflict and ambiguity. The study showed a positive relationship between job demand and job stress for both the Hong Kong and American bank tellers ($r = .16, p < .05$; $r = .22, p < .001$, respectively).

A study by Mikkelsen, Ogaard and Landsbergis (2005) examined the relationship between psychological and physical job demands and job stress in a study sample of 2,103 employees working in 13 electric companies in Norway. Job demand was measured using the Job Content Questionnaire (Karasek, 1985) and the Copenhagen Psychosocial Questionnaire (Kristensen & Borg, 2001) measuring quantitative, emotional, cognitive and emotional job demands. Perceived job stress was measured using the Cooper's Job Stress Questionnaire (Cooper, 1981). The study showed a significant positive relationship between the emotional and quantitative dimensions of job demand and job stress ($r = .21; p \leq .05$; $r = .33, p \leq .05$ respectively), supporting the hypothesized relationship.

A cross-cultural study by Pal and Saksvik (2008) involving 27 doctors and 328 nurses from Norway, with mean age of 30.1 years, and 111 doctors and 136 nurses from

India, with mean age of 43.3 years, examined the relationship between job demand and job stress. Job demand was measured using four (4) items from JCO (Karasek, 1985) describing job demand as requiring intense concentration, working fast, and hectic job. Job stress was measured using the three (3) item subscale “Work” from Cooper Stress Check (1981) measuring amount of work, time pressure, and impact of work on private life. The study showed a significant positive relationship between job demand and job stress among the Norwegian subjects ($r = .39, p < .01$) supporting the hypothesized relationship, but not among Indian subjects ($r = -.01, ns$). The difference in results was explained as due to cultural differences in the perception of job demand between cultures.

In summary, findings from these studies support the theoretical relationship between job demand and job stress. These studies provide empirical support for the theoretical propositions that posit a positive relationship between job demand and job stress.

Theories of job control

Job control is generally defined as the ability to exert influence over one’s work and work environment in order to establish a less threatening or a rewarding work situation (Fox, Dwyer & Ganster, 1993; Ganster, 1989; Soderfelt et al., 1996). Early conceptualizations of job control described two dimensions of the phenomenon: 1) participation in decision-making, which gives workers the opportunity for joint decision making in organizational structure and hierarchy, and b) job autonomy, which gives workers control over his or her tasks including job design, freedom and discretion over work scheduling, and determining procedures to use in carrying out the work (Frese, 1989; Ganster, 1989). Job control is also conceptualized as a condition resource, a lack

or a loss of which can cause a threat or stress to an individual when faced with a challenging situation such as excessive job demand (Bakker et al., 2007; Hobfoll, 1989)

Theorists explain that the need for control is inherent to human beings, and the belief in personal control is essential to one's sense of competence and functioning. Having control allows an individual to exercise personal choice over behavior (Ganster & Fusilier, 1989; Langer, 1983). A lack of control has been posited to be detrimental to the coping process following the perception of stress (Hobfoll, 1989; Johnson, 1989; Langer, 1983). Moreover, Frese (1989) posits that when control is threatened, the result is incapacitating. Frese posits that control may exert a buffering effect on the impact of work stressors on the experience of job stress.

Spector (1998, 2002) posits three propositions regarding the relationship between job control and stress. First, that having high job control over specific work condition reduces the individual's perception of the work environment as stressful. Second, that perceived control moderates the relationship between work-related stressors and stress. The strength of the relationship between environmental stressors and stress is low when perceived control is high and the relationship is high when perceived control is low. Third, that perceived control helps determine which coping response to choose. High level of control leads the individual to attempt problem focused coping approaches, which are usually productive and beneficial to the organization, while low levels of control leaves the person to believe that nothing can be done to overcome the situation.

The Job Demand/Control/Social Support Model (JDCS) (Karasek, 1979; Karasek & Theorell, 1990) provides a comprehensive and integrated set of theories which further explain the relationships among job demand, job control, and stress. In the theoretical

model, job control is defined as a worker's control over the performance of his or her job, and is labeled "decision latitude." Decision latitude is proposed to have 3 distinct dimensions: (1) skill discretion; (2) decision authority or autonomy; and (3) participatory organizational influence. Skill discretion is the degree of creativity, flexibility, and variation that is permitted the worker in deciding what skills to utilize to complete job-related tasks. Decision authority is the degree to which workers can make decisions about their work, and is synonymous with job-related autonomy. Participatory organizational influence is a macro-level component of decision latitude in that it is the degree to which workers have opportunities to influence organizational-level issues and decisions. Participatory organizational influence includes, but is not limited to, activities such as union, committee, and work-group participation.

The JDCS model (Karasek, 1979, 1997; Karasek & Theorell, 1990) proposes that decision latitude is an important resource utilized by workers to attend to job demands while minimizing stress. The theorists explain that when workers are faced with job demands, they utilize decision latitude to formulate and implement an optimal response to the demands. Consequently, the task, albeit challenging, is completed without depleting the resources of the worker and, importantly, without activating a prolonged stress response. The theorists further explain that, congruent with the theory of stress and adaptation by Selye (1976), high job demand elicits a state of arousal on the individual. This state of arousal triggers a biological response; especially the neuron-endocrine responses necessary to protect the individual from injury. With high decision latitude, the worker is able to execute appropriate physical and psychological reactions, not only completing the high demand task, but in the process, effectively utilizing the potential

energy elicited during the state of arousal. Restoration of the worker's biological equilibrium then follows. With low decision latitude, however, the work environment puts a constraint restricting the worker in performing the course of action needed to manage the stressful situation. Similar to Selye's state of exhaustion, continued state of arousal due to job demands, combined with a lack of ability to control and regain equilibrium results in job-related stress and increased susceptibility to development of deleterious long term physical and psychological consequences of stress.

Therefore, the theorists specifically posit that by reducing or eliminating a prolonged job stress response, increased decision latitude moderates the negative impact of high job demand. The theorists further propose a direct and inverse relationship between decision latitude and job stress. Moreover, the theorists propose that a combination of high job demand and low decision latitude exerts an additive effect intensifying a stress reaction. Conversely, however, the theorists propose that high job demand and high decision latitude ameliorate job stress response in that high decision latitude allows the worker to effectively problem solve and convert arousal energy into definitive action.

In summary, theories propose that job control or decision latitude has a direct and negative relationship with job stress. Moreover, decision latitude moderates the impact of job stressors on job stress. (Frese, 1989; Karasek & Theorell, 1990; Spector, 1998, 2002). Theoretical explanations provided by the JDCS Model (Karasek & Theorell, 1990) identify the processes through which the moderation effects of decision latitude occur.

Job control and job stress: Empirical literature

A study by Brunborg (2008) examined the relationship between job control and job stress in a sample of 212 employees from 12 different workplaces in Norway with mean age of 41.9 years. Occupations included computer programmer, retail workers, teachers, factory workers, health workers, painters, educators, bank employees, engineers and park workers. Job stress was measured using the 16 item Cooper's Job Stress Questionnaire (Cooper, 1981) measuring work-related stress and communication stress. Job control was measured by using the Norwegian version of Job Content Questionnaire (Theorell, Michelsen & Nordemar, 1991). The study showed significant negative correlation between job control and job stress ($r = -.23$; $p = <.01$).

A study by Xie (1996) investigated the relationships between job control and job stress in a sample of 1,200 full time Chinese employees, averaging 34 years of age. Job related feelings of anxiety and depression were used as measures of job stress. Anxiety was measured by Parker and DeCotiis' 1983 scale, and depression was measured by Wheaton's (1991) instrument. Job control was measured by Karasek's 1979 job demand and job control measure. The study showed significant negative correlations between job control and job related anxiety ($r = -.13$, $p < .01$) and between job control and job related depression ($r = -.27$, $p < .01$).

The moderating function of job control on the relationship between job demands job stress, and anxiety was examined by Perrewe and Ganster (1989) in a sample of 125 American undergraduate students enrolled in a management course. Job stress was measured using the Subjective Stress Scale (Parisen, Rich & Jackson, 1969) and Affect Adjective Checklist (Zuckerman, 1960) measured anxiety as an additional indicator of

job stress. Perceived Control, such as freedom as to how to work, choice in how to assemble, was measured using the 3-item scale developed by the investigators for the study. Job demand was measured using the 4-item scale developed by the investigators for the study, which included items related to workers' having to work too fast, not enough time, and too much work to be done in the workplace. Findings from the study indicated an inverse relationship between perceived control and anxiety ($r = -0.216$, $p = <.01$); the relationship between perceived control and job stress, however, was not significant ($r = -.128$, $p = \text{n.s.}$). Consistent with the theory, findings also indicated that subjects with high demand and high control had lower anxiety, suggesting that perceived control tended to moderate the relationship between job demand and job stress, although the relationship failed to reach statistical significance at the $p = .05$ level ($\beta = -.068$, R^2 change was $.023$, $F = 2.872$, $p = .10$). Measurement and power limitations including only a three-item scale to measure perceived control and a relatively small sample size, may have contributed to this lack of significance.

In summary, these studies support the theoretical main effects of job control or decision latitude, on job stress and the moderating effects of job control on the relationship between job demands and job stress. As theorized, findings supported a negative relationship between job control and job stress. Findings also supported the theoretical proposition that the effect of job demand on job stress can be moderated by job control.

Theories of Social Support

Social support is a multifaceted construct generally referring to the availability and quality of help extended to an individual in need (Egbert, Koch, Coeling & Ayers,

2006; Hobfoll & Shirom, 2001). Social support is broadly categorized as either functional, referring to what people do to provide support, or structural, referring to membership in a social or work organization wherein the number of people comprising the network provides variability on one's support system (Beehr & Glazer, 2005; House, 1987; House, Landis & Umberson, 1988).

Cobb (1976) conceptualizes social support as a form of information providing 1) emotional support, which provides perceptions of nurturance and being loved and cared for; 2) esteem support, which reaffirms the person's self worth; and 3) network support, which provides assurance to the person in need that other members are available to each other in times of crisis. Most notably, Weiss (1974, 1998) defines social support as a provision of social relationships primarily by family members and close friends and secondarily by members of one's work or social organizations. He contends that different specialized social relationships provide a) attachment from which one gains sense of security and comfort, and in the absence of which one feels lonely and restless; b) social integration for companionship, interaction and sharing of concerns, and in the absence of which one's life becomes dull; c) opportunity for nurturance and a sense of being needed, without which life could be meaningless; d) reassurance of worth and one's competence in a given social role either at work or at home, the absence of which could result to low-self regard; e) a sense of reliable alliance provided by those who may be needed for assistance, without which one may feel vulnerable; and f) emotional support or problem-solving guidance, the absence of which may lead to the individual experiencing severe distress. Weiss purports that individuals maintain different specialized relationships in order to gain these provisions.

Focusing on specialized relationships at work, Kaplan, Cassel and Gore (1977) posit three categories of social support at work: a) tangible support which helps the employee get the job done, also known as instrumental support, b) appraisal support which helps the employee redefine role expectations, and c) emotional support which buffers the perception of job stress severity. The theorists propose that in the work environment, social support is one psychosocial factor that buffers or protects the worker from the adverse effects of a noxious or unpleasant job situation. The theorists posit that the protective function of social support is strong when it is specific to the particular stressor. Further, the theorists propose that increasing social support at work is more practical than attempting to reduce the stressor stimuli, which is usually organizationally-induced.

House (1981) expands on the conceptualization of earlier theorists and identifies sources of social support at work to include the supervisor and co-workers. He purports a comprehensive structural and functional categorization of supportive behaviors or acts that occur in a work-related context: a) emotional support which provides empathy, caring, love and trust; b) instrumental support which involve directly helping the individual, such as helping with their work; c) informational support which provide a person with knowledge that the person can use to achieve a task or cope with a work-related problem; and d) appraisal support which also involves transmission of information that a person can use in self-evaluation. House further proposes that a supportive supervisor is one who is able to provide all four types of support – emotional, informational, instrumental, and appraisal support. A supportive supervisor is perceived as friendly and helpful, empathic and understanding and demonstrates real concern for

others. House contends that the ability of the supervisor to provide social support depends on the number of supervised employees, the nature of the supervisory task and the relations among employees. The ability of the co-workers to provide social support depends on the degree to which the supervisor role models social support, the extent of participative supervision, the type of jobs in the organization, the values of the organization in promoting social behavior, and the values of the society in general regarding individualistic and collective functioning.

Theorists not only propose a direct and inverse relationship between social support at work and job stress, but also propose that social support moderates the relationship between job demand and job stress (House, 1981; Viswesvaran, Sanchez & Fisher, 1999). Theory posits that the positive and moderating effects of social support at work are achieved through several mechanisms. Supportive supervisors and co-workers meet the human need for security and belonging leading to positive psychological and emotional states which in the event of high job demand protect the individual from perceiving the situation as stressful at initial encounter (Cohen & Wills, 1985; Vaux, 1988). The quality of social network and social integration aspects of social support at work are posited to provide additional resources when job demands are high, ameliorating the level and duration of negative response to stressful situation (Cohen, Gottlieb & Underwood, 2000; Hobfoll & Shirom, 2001; Lakey & Cohen, 2000). Additionally, Johnson (1989) proposes that social support in the workplace functions as a collective type of control whereby employees create their own work environment that is psychologically less threatening. The presence or actions of supervisors and co-workers

in times of high job demands serve as a resource in facilitating active coping behaviors hence, buffering or mitigating job stress.

Lastly, the job demand –control –support model (JDCS) (Johnson & Hall, 1988; Karasek, 1979; Karasek & Theorell, 1990) also defines social support as all levels of helpful interaction available on the job from both supervisors and co-workers. The theorists, adapting House's and Johnson's propositions on social support, added the concept of social support on the original job demand-job control theory, creating a three dimensional representation of work environment consisting of job demand, job control, and social support.

According to the JDCS, the dimensions or categories of social support at work include, firstly, socioemotional support, characterized by trust between the worker, co-workers, and supervisors. The theorists explain that socioemotional support integrates the worker into the overall work group, and promotes social cohesion. Secondly, instrumental social support represents the extra resources or assistance with work tasks that are provided by co-workers and/or supervisors. The theorists propose that by providing actual assistance, instrumental social support moderates job stress reaction produced by high job demands. Explaining how this moderation occurs, the theorists propose that socio-emotional support and instrumental support, in concert, prevent a prolonged stress response via the enhancement of emotion-focused and problem-focused coping, and the development and implementation of action that addresses the job demand. Enhanced coping such as a positive sense of identity, confirmation of the worker's value to the work group, a sense of worth and belonging, and instrumental aid,

facilitate the worker's optimal responses to high job demand by reducing the level of deleterious stress reaction (Karasek & Theorell, 1990).

In summary, social support at work is defined as all helpful interactions available on the job. The supervisor and co-workers are the major source of social support at work (Johnson, 1989; House, 1981; Karasek & Theorell, 1990). A direct and inverse relationship between social support at work and job stress is proposed (Cohen et al., 2000; House, 1981). Additionally, social support at work is proposed to moderate the relationship between high job demand and job stress by enhancing emotion-focused coping and by facilitating optimal actions that address the job demand (Johnson, 1989; Karasek & Theorell, 1990).

Social Support and Job Stress: Empirical Literature

A study by Morano (1993) examined the relationship between workplace social support and work-related stress among 51 staff nurses, age range not mentioned, working in a teaching medical center in the United States. Supervisor and co-worker social support was measured using the Norbeck Social Support Questionnaire (Norbeck, Lindsey & Carrieri, 1981) composed of three scales, the emotional support, the tangible aid or support and giving feedback. Workplace stress was measured using the Nursing Stress Scale (Gray-Toft & Anderson, 1981) which describes situations in the physical, psychological and social environment of the hospital that may cause nurses to experience stress. Findings showed a negative correlation between emotional support given by supervisor and work-related stress ($r = -.299$, $p = .015$). In addition, the findings also showed a negative correlation between the tangible support given by co-workers and work-related stress ($r = -.249$, $p = .036$).

The relationship between social support and job stress and the moderating effect of social support on the relationship between job demand and job stress were examined by Brunborg (2008) in a sample of 212 employees from 12 different workplaces in Norway, age range from 19 to 60 years old with a mean of 41.9 years. Occupations included computer programmer, retail workers, teachers, factory workers, health workers, painters, educators, bank employees, engineers and park workers. Job demand was measured by the Swedish version of the Job Content Questionnaire (JCQ) (Theorell et al., 1991). Social support was measured by a three item subscale measuring support from co-workers of the same instrument. Job stress was measured using the 16 items Cooper's Job Stress Questionnaire (Cooper, 1981) measuring work-related stress and communication stress. Findings showed a significant negative correlation between social support and job stress ($r = -.37, p < .01$), and a significant main effect of social support on job stress ($\beta = -.38, p < .05$).

A study by Orpen (1992) examined the relationship between social support and job stress, and tested the moderation effect of social support on the relationship between work stressors and job stress among 138 adult black clerical employees of six industrial firms in South Africa. Work stressors were measured by the 12-item Work Stress Scale (Caplan et al., 1975), job stress was measured using the 6-item Work Distress Scale (Kandel, Davies & Raveis, 1985) and the 12-item Somatic Symptoms Scale by Derogatis, Rickels and Rock (1976). Peer support and supervisor support were measured using scales developed by Caplan et al., (1975) measuring the extent other people make life, can be relied upon and are willing to listen to one's problems. A significant and inverse relationship was found between peer support and job

stress ($r = -.20$, $p = <.05$). Moreover, work-related social support significantly moderated the relationship between work stressors and job stress with those receiving more support reporting less stress (R^2 change from .144 to .188, $F(1, 134) = 5.59$, $p = <.05$)

In summary, these studies support the theorized inverse relationship between social support and job stress. In addition, the role of social support in moderating the impact of work stressors on job stress was also demonstrated, providing empirical support for the theoretical propositions. .

Gaps and Limitations

In summary, the empirical literature supports the theoretical relationships among job demand, decision latitude/job control, social support, and job stress. Moreover, the moderating effects of job control and social support on the relationship between job demand and job stress is supported in the empirical literature. Although the Job Demand/Job Control/Social Support Model provides a comprehensive and integrated set of theories regarding the relationship of the psychosocial work environment and job stress, the full model, including the moderation effects of job control and social support has only been tested in a few studies involving health care employees; only a scant number of studies involved registered nurses. There have been no studies that have tested the full model in a sample of registered nurses practicing as staff nurses in long term care. The purpose of this proposed study is to address this important gap in the empirical literature by determining the relationships among job demand, decision latitude, social support, and job stress in a sample of registered nurses practicing as staff nurses in skilled nursing facilities.

Theoretical Rationale

Job stress is defined as a state in which one's feelings of unpleasant emotions or reactions, resulting from perceived undesirable conditions in the work environment, that pose a threat to the individual, leading the individual to deviate from normal functioning (Apply & Trumbull, 1987; Beehr & Newman, 1978; Clegg, 2001; Karasek, 1979; Lovallo, 2005; Parker & DeCotiis, 1983; Xie & Johns, 1995). Job demand is defined as work-related psychological or physical task requirements or workload, which include qualitative and quantitative demands (Karasek, 1979, 1997; Karasek & Theorell, 1990; Theorell & Karasek, 1996). Theories posit a positive relationship between job demand and job stress (Karasek, 1979, 1997; Karasek & Theorell, 1990; Payne, 1979; Schabracq et al., 1996). Empirical literature supports this theoretical relationship (Schaubroeck et al., 2000; Mikkelsen et al., 2005). Therefore, based on reviews of the theoretical and empirical literatures, a positive relationship between psychological and physical job demand and job stress is hypothesized.

Job control, or decision latitude, is defined as a worker's control over the performance of his or her job (Fox et al., 1993; Karasek, 1979, 1997; Karasek & Theorell, 1990). Theory posits an inverse relationship between job control and job stress (Frese, 1989; Ganster & Fusilier, 1989; Hobfoll, 1989; Johnson, 1989; Karasek, 1979, 1997; Karasek & Theorell, 1990; Langer, 1983). Moreover, theory posits that job control moderates the relationship between job demands and job stress (Hobfoll, 1989; Johnson, 1989; Karasek, 1979, 1997; Karasek & Theorell, 1990; Spector, 1998). Empirical literature supports an inverse relationship between job control and job stress (Brunborg, 2008; Xie, 1996), and the moderation effect of job control on the relationship between

job demand and job stress (Perrewe & Ganster, 1989). Therefore, based on reviews of the empirical and theoretical literatures, an inverse relationship between job stress and job control is hypothesized. Based on the theoretical literature, it is also hypothesized that job control will moderate the relationship between psychological and physical job demand and job stress.

Social support at work is defined as all levels of helpful interaction available on the job from supervisors or co-workers (Johnson, 1989; Karasek & Theorell, 1990; 1996). Theory posits an inverse relationship between social support and job stress (Cobb, 1976; Hobfoll, 1989; House, 1981; Johnson, 1989; Karasek & Theorell, 1990). Moreover, theory posits that social support moderates the relationship between psychological and physical job demand and job stress (Hobfoll & Shirom, 2001; House, 1981; Johnson, 1989; Karasek & Theorell, 1990). A small amount of research has tested and supported the theorized relationship between social support and job stress (Geller & Hobfoll, 1994; Muncer, Taylor, Green & McManus, 2001; Orpen, 1992). Likewise, the moderation effect of social support on the relationship between job demand and job stress was tested in one study and supported (Orpen, 1992). Therefore, this proposed study will add to the empirical literature. Based on reviews of the theoretical and empirical literatures, an inverse relationship between social support and job stress is hypothesized. Additionally, it is hypothesized that social support will moderate relationship between psychological and physical job demand and job stress.

Hypotheses

Derived from these theoretical propositions, the proposed study will test the following hypotheses:

1. Increased psychological and physical job demand is related to increased job stress in staff nurses working in skilled nursing facilities.
2. Increased job control is related to decreased job stress in staff nurses working in skilled nursing facilities.
3. Increased social support is related to decreased job stress in staff nurses working in skilled nursing facilities.
4. Job control will moderate the relationship between psychological and physical job demand and job stress in staff nurses working in skilled nursing facilities.
5. Social support will moderate the relationship between psychological and physical job demand and job stress in staff nurses working in skilled nursing facilities.

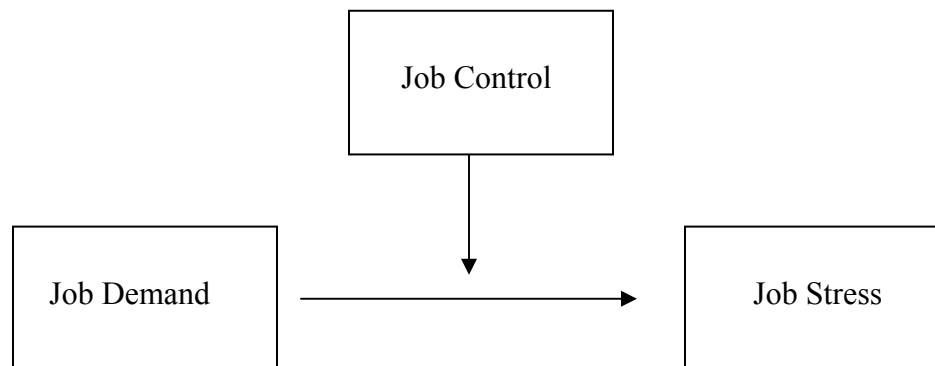
Diagram of Moderation Model #1

Figure 1. The moderating model being tested (on the basis of Baron & Kenny, 1986).

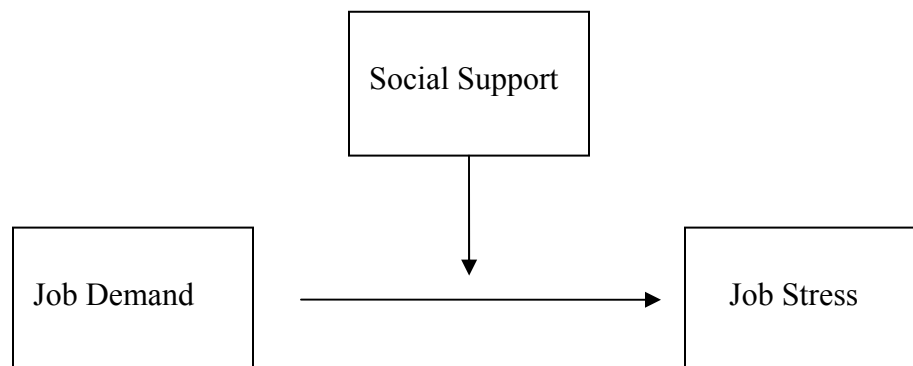
Diagram of Moderation Model #2

Figure 2. The moderating model being tested (on the basis of Baron & Kenny, 1986).

Chapter 3

Methods

This study used a descriptive correlational design to test the relationships among (1) job demand, job control, and job stress; and (2) job demand, social support and job stress. The moderating effects of job control and social support on the relationship between job demand and job stress was also tested. This chapter presents the research setting, sample, instruments, and procedure for data collection.

The Research Setting

Participants were recruited onsite at nine (9) licensed skilled nursing facilities (nursing homes) located throughout northern New Jersey, southern New York State and metropolitan New York City. Four of the nursing homes were located in urban areas and five were located in rural areas. Three nursing homes were privately owned, one nursing home was owned and operated by religious organization, and three nursing homes were operated by the city or county. Two of the nursing homes were relatively small with less than 100 residents; six were moderately large with more than 200 to 500 residents; and one nursing home was large with more than 800 residents. All nursing homes receive Medicare and Medicaid funds. The three county owned nursing homes were unionized. All nursing homes employed registered nurses working in the nursing units in the capacity of a staff nurse having direct patient care responsibilities reporting directly to a supervisor of nurses or to the director of nurses. Other nursing personnel working with the registered nurse in the nursing units include licensed practical nurses, certified nursing home nurse aides and clerical associates.

Sampling Methods

Letters about the meeting were sent out to the registered nurses few days in advance followed-up by a verbal invitation made to the units on the day of the data collection. The director of nurses or her designee identified an area within the facility where the investigator can meet the participants to explain the study and where the participants can complete the questionnaires immediately.

The Sample

The parameters of the sample studied were men and women who met the following criteria: (1) licensed Registered Nurses, (2) with active permanent employment status for at least six months, (3) working at least 30 hours per week, and (4) employed in the position of staff nurse with patient care responsibilities. To achieve a power of .80, a minimum of 84 subjects is required to ensure a medium effect size of $f^2 = .15$, and a .05 level of significance (Murphy & Myors, 1998). Of the 181 registered nurses who participated in the study, 22 complete responses were excluded because of position or title delimitation, and one (1) complete response was excluded due to hours work per week delimitation leaving a final sample of 158 registered nurses with complete responses for analysis. A demographics and participants characteristics questionnaire was developed for this study to describe the sample. The demographic and employment characteristics of the sample are presented in Table 1.

The final sample consisted of 158 registered staff nurses with patient care assignments. A total of 13 males and 145 females comprised the sample with ages ranging from 25 to 67 years ($M = 46.55$; $SD = 10.38$), and experience as registered nurse ranged from .7 to 41 years ($M = 16$; $SD = 11.44$). The race of the sample included White

(n = 18), African-American (n = 16), Asian (n = 113) and other (n = 9). Work hours per week ranged from 30 – 50 hours (M = 40).

Table 1

Subjects' Demographic and Employment Characteristics

Variable	N	%
Gender		
Male	13	8.2
Female	145	91.8
Race		
White	18	11.4
African-America	16	10.1
Asian	113	71.5
Other	9	5.7
Marital Status		
Single	20	12.7
Married	126	79.7
Divorced/Separated	8	5.1
Widowed	3	1.9
Education		
RN Diploma	49	31
Associate Degree	34	21.5
Baccalaureate –Nursing	54	34.2
Baccalaureate –other	8	5.1
Master's – Nursing	5	3.2
Master's – other	6	3.8
Doctorate – other	1	.6
Shift Work		
Days – 8 hours	89	56.3
Evenings – 8 hours	33	20.9
Nights – 8 hours	35	22.2
Salary (in Thousand \$)		
30 – 60	26	16.5
60 – 100	129	81.6
Above 100	3	1.9

Instruments

Job Stress Scale.

Job stress was measured using the Job Stress Scale (Parker & DeCotiis, 1983). It is a 13-item summative Likert-type rating scale that measures overall job stress using anchors that range from 1 (strongly disagree) to 5 (strongly agree). The scale scores can range from 13-65 with higher scores indicating higher levels of job stress. The psychometric evidence of the instrument has been reported in a sample of 367 managers of a major restaurant chain in the United States, with a mean age of 28.55 years (Parker & DeCotiis). The dimensionality of the scale was identified through principal component analysis with varimax rotation using a factor loading of not less than .50 as criterion for item retention. Two components were extracted explaining 77.5% of the variance. The first component closely describes *feelings of being under time pressure* with Cronbach's alpha of .86, and the second component describes *job-related feelings of psychological distress* with Cronbach's alpha of .74. The correlation between the two factors was .54 indicating that *time pressure and psychological distress* are two separate, distinct dimensions.

Construct validity of the instrument was demonstrated in the study by Xie and Johns (1995) among 418 full time employees testing the correlation between Job Stress Scale and another established measure of job stress, the Emotional Exhaustion subscale of the Maslach Burnout Inventory (Maslach & Jackson, 1986). The correlation between the Job Stress Scale and Emotional Exhaustion subscale produced a coefficient of $r = .66$, $p = < .01$. The direction and strength of the correlation is consistent with convergent

validity of the Job Stress Scale, a type of construct validity measuring the same concept using different instruments (Mishel, 1998).

Concurrent validity of the scale was established by testing the correlation of theoretically related variables of diminished satisfaction, low job performance and turnover intentions with the scores on the Job Stress Scale. Significant correlations were found between the Job Stress Scale and the four items job satisfaction scale ($r = -.34$, $p = < .01$), a turnover intention item ($r = .31$, $p = < .01$) among 175 hospital employees (Jamal & Baba, 2003), and an overall global performance rating scale ($r = -.42$, $p = < .01$) (Jamal, 2007).

The instrument demonstrated high internal consistency reliability ranging from .74 to .89 across different occupational groups and culture (Addae & Wang, 2006; Glazer & Kruse, 2008; Hsieh, 2004; Jamal, 2007; Parker & DeCotiis, 1983; Xie, 1996). The scale was also used and found to be reliable among nurses working in Canadian hospital reporting a Cronbach's alpha of .84 (Jamal & Baba, 2000). According to DeVellis (2003), a coefficient alpha of .70 or better is acceptable and adequate. The Cronbach's alpha obtained for the current study was .91.

JCQ Psychological Demand Scale.

Psychological job demand was measured using the *JCQ Psychological Demand Scale* (Karasek, 1985). It is composed of 9 items which assesses job dimensions such as “how fast and hard one works”, “time constraints”, and “conflicting demands” in a 4 point Likert –type rating using the anchors 1 (strongly disagree), and 4 (strongly agree). Scale construction guideline was provided by the JCQ center upon request. The possible

range of scores is -6 to 21. Higher scores indicate higher levels of psychological job demands.

Concurrent validity of the *Psychological Demand Scale* has been established through its correlation with the other scales of JCQ. Moderate positive relationships between the scores of *Psychological Demand Scale* and *Physical Demand Scale* were consistently found among men and women in U.S. Quality of Employment Surveys ($r = .28$ for men, $r = .36$ for women), and in the Netherlands ($r = .36$ for both men and women) (Karasek et al., 1998). The strength of the correlations establishes the co-existence of psychological and physical job demands in the work process. Low positive correlations ($r = .04$, $p = < .05$ to $r = .45$, $p = .01$) between the scores of *Psychological Demands Scale* and *Decision Latitude Scales* were found among men and women in six studies across U.S., Canada and Europe. The strength and direction of the relationship between the two scales also establish the concurrent existence of “responsibility” and “authority” and the relevance of “skill level” to “psychological demands” (Karasek et al. 1998).

Predictive validity of the scale was established by testing the correlation between the scores of the *Psychological Demand Scale* and the theoretically relevant measures of psychological distress and emotional exhaustion assessed at time 2 among 1,172 nurses working in acute hospitals in Canada. Exposure to high psychological demand was associated with psychological distress (PR = 1.71), and emotional exhaustion (PR = 2.61) eighteen months after (Bourbonnais, Comeau & Vezina, 1999).

The nine (9) items *Psychological Demand Scale* demonstrates acceptable internal reliability among health care workers with coefficient alpha ranging from .78 to .86

(Bourbonnias et al., 1999; O'Connor, O'Connor, White & Bundred, 2000; Parkes & Von Rabenau, 1993; Parkes, Mendham & von Rabenau, 1994). The scale has been used among 1,163 nurses working in two U.S. states with reliability coefficient alpha of .78 (Trinkoff, Lipscomb, Geiger-Brown, Starr & Brady, 2003). A modest reliability of .70 is acceptable for a valid measure (Nunnally & Bernstein, 1994). The Cronbach's alpha obtained for the current study was .78.

JCQ Physical Demand Scale.

The physical job demand was measured using the *JCQ Physical Demand Scale*. It is composed of 5 items used to measure workloads requiring physical exertion, in a 4 point Likert type rating using the anchors 1 (strongly disagree), and 4 (strongly agree). Scale construction guideline was provided by JCQ center upon request. Possible range of scores is 5 to 20. Higher scores indicate higher levels of physical demand.

Construct validity of the *Physical Demand Scale* was established by correlating the total scale score with the physical exertion worker trait data on the U.S. Dictionary of Occupational Title with a high correlation of $r = .62$ (Karasek & Theorell, 1990). The strength and direction of the relationship between the two data indicate measurement of the same concept using different instrument (Mishel, 1998).

Predictive validity of the *Physical Demand Scale* was established among 1, 163 actively licensed U.S. registered nurses by examining the correlation between scores of the *Physical Demand Scale* with the score on musculoskeletal symptoms questionnaire. Highly significant association was found between the *Physical Demand Scale* and reported neck, back and shoulder musculoskeletal disease (OR = 4.98, $p < .0001$, OR = 5.30, $p < .0001$, and OR = 6.13, $p < .0001$) (Trinkoff et al., 2003).

Reliability of five (5) item *Physical Demand Scale* was established among 1,163 U.S. nurses working in hospitals with Cronbach's alpha coefficient of .89 (Trinkoff et al., 2003). In addition, the *Physical Demand Scale* has been reported with good reliability coefficient by international users of the JCQ scales (Karasek, 1985; Karasek et al., 1998). The Cronbach's alpha obtained for this study was .75.

JCQ Decision Latitude Scale.

The *Decision Latitude scale* of the JCQ (Karasek, 1985) was used to measure job control. The scale is made-up of 9 items measuring two theorized dimensions of job control, skill variety with 6 items, and decision authority with 3 items, in a 4 point Likert-type summated rating scale using the anchors 1 (strongly disagree) and 4 (strongly agree). The sum of two dimensions represents total score for job control with higher score indicating higher level of job control. Scale construction guideline was provided by JCQ upon request. The possible range of scores is 24 to 96.

Construct validity of the scale was established by testing the correlation of a construct theoretically related to job control such as job autonomy, with the *Decision Latitude Scale*. The correlation between the scores of the *Decision Latitude Scale* of the JCQ and job autonomy was $r_s = .60, p = < .0001$ (Hall, 2007). The strength and direction of the relationship is consistent with the theorized relationship as well as demonstrates difference between the two concepts.

Concurrent validity of the scale was established by examining the relationship between the scores of the *Decision Latitude Scale* and the theoretically relevant variables of emotional exhaustion, and depression and job dissatisfaction among health care workers. Significant correlations in the theoretically expected direction were found

between the scores of *Decision Latitude Scale* and emotional exhaustion ($r = -.33$, $p = .001$), depression ($r = -.20$, $p = .001$), and job dissatisfaction ($r = -.44$, $p = .001$) (Landsbergis, 1988). Findings indicate a moderate relationship between the measure of *Decision Latitude* and the theorized concurrent variables of emotional exhaustion, depression and job dissatisfaction.

Convergent validity of the *Decision Latitude Scale* was established by the high correlation between the objective and self-report measures of decision latitude rated separately by different raters, $r = .70$ (Karasek & Theorell, 1990). This finding was corroborated by a high correlation between Decision Latitude Scale and the theoretically relevant measure of autonomy and variety, $r = .87$ (Karasek & Theorell). High correlation between scores of constructs that are theoretically similar and rated separately demonstrates convergent validity for the instrument being tested (De Von et al., 2007).

The nine (9) items *Decision Latitude Scale* demonstrated good reliability across studies involving different occupations and cultures ranging from .79 to .86 (Karasek et al., 1998; Noblet et al., 2006; Parkes & von Rabenau, 1993). The scale has been used to assess job control among nursing home employees including nurses and demonstrated a reliability coefficient of .80 (Landsbergis, 1988). The scale has been found to be the most consistently understood and reliable component of the JCQ (Karasek & Theorell, 1990). The Cronbach's alpha obtained for the current study was .67.

JCQ Social Support Scale.

The *Social Support Scale* of the *JCQ* was used to measure the variable social support at work. The scale is comprised of two dimensions, the four (4) item co-worker support, and the four (4) item supervisor support in a Likert-type rating scale using

anchors that range for 1 (strongly disagree) to 4 (strongly agree), measuring different sources of social support at the workplace. The sum of two subscales comprised the total score of the social support measure; higher scores indicate a higher level of social support at work. Scale construction guideline was provided by JCQ upon request. The possible range of scores is 8 to 32.

Concurrent validity of the *Social Support Scale* has been established by examining the correlation between its total score and the score of theoretically relevant construct *Decision Latitude Scale* of the JCQ. The correlation between the two scales produced a coefficient of $r = .27$, $p = .01$ which is consistent with the theorized relationship between having good relationship with supervisors and co-workers and decision latitude (Karasek et al., 1998).

Predictive validity of *Social Support Scale* was established by examining the relationship between the social support with theorized relevant construct of job dissatisfaction, depression and physical strain among a large cohort of health care workers from hospitals and nursing homes in the U.S. Consistent with the theorized relationship, the score of *Social Support Scale* demonstrated predictive influence on employees job dissatisfaction ($R^2 = .43$, $p = .001$), depression ($R^2 = .16$, $p = .01$), and physical strain ($R^2 = .20$, $p = .001$) (Landsbergis, 1988).

The *Social Support Scale* demonstrated good reliability across occupations ranging from $\alpha = .72$ to $\alpha = .81$ for the co-worker social support subscale, and $\alpha = .83$ to $\alpha = .84$ for the supervisor social support subscale. The reliability of the scale had also been established among 177 nurses working in acute hospitals and nursing home in the U.S, $\alpha = .80$ for co-worker support, and $\alpha = .90$ for supervisor support (Landsbergis, 1988). The

Cronbach's alpha obtained for the current study was .70 for co-worker support, and .89 for supervisor support.

Demographic and Characteristics Questionnaire.

Demographic data collected include age, race, education, gender, marital status, job tenure, years of experience, shift, hours worked per week and income from job per year. Previous studies have found significant relationship between satisfaction with pay and job stress (Hsieh, 2004; Jamal & Preena, 1998). Additional information as suggested by Karasek (1985) was also obtained such as union membership, job title and presence of children under six years old in the household.

Procedure for Data Collection

The directors of nursing of skilled nursing facilities (nursing homes) licensed in the states of New Jersey and New York were contacted by phone or e-mail by the principal investigator to recruit participants. Information about the study, the data collection procedures and securing of staff consent were included in the initial discussion. Following the initial contact, a follow-up formal letter (*Appendix A*) and appropriate authorization form (*Appendix B*) were sent by mail to the Directors of Nursing or Nursing Home Administrators for signature indicating their willingness to participate in the study. Approval from the Institutional Review Board (IRB) of Rutgers, The State University of New Jersey was obtained prior to data collection. A copy of the instrument packet and the consent form were also given to the facilities through the Directors of Nursing or designee to keep for their files.

The primary investigator worked with the Directors of Nursing from each of the participating facilities in scheduling a meeting with the nursing staff at the mutually

agreed convenient date and time. To avoid possible bias in data collection, a research assistant was hired and trained to collect the data from the facilities for which the principal investigator is an administrator. During the meeting, the primary investigator or the research assistant explained the study, answered questions and recruited potential participants. Immediately following the meeting, nurses interested in participating met the investigator or the research assistant, in a private, quiet room assigned by the Director of Nursing. As potential participants present to the investigator or research assistant, the delimitation criteria and rights of human subjects was reviewed. As required by IRB, two copies of informed, signed consent was obtained (*Appendix C*), one copy was given to the participant and one copy was kept by the investigator. Participants were then asked to complete the data collection packet in the following order: (1) the Demographics and Characteristics Questionnaire; (2) the Job Stress Scale (Parker & DeCotiis, 1983); (3) the JCQ Psychological Demand Scale, the Physical Demand Scale, the Decision Latitude Scales, and the JCQ Social Support Scales, in the order recommended by Karasek (1985) (*Appendix D, E, F*). The primary investigator, or the research assistant, remained on-site to answer questions during the data collection. Each nurse sealed the completed questionnaire in the envelope provided, and the envelopes were collected by the principal investigator or the research assistant. Each nurse completing a research packet was given a thank you note and a little token for their participation in the study.

Data Management

Data was stored electronically on a pass-word protected desk top computer located in a locked room. Only Dr. Flynn and the investigator have access to the data. Computer files were backed up onto a portable external drive kept in a locked cabinet.

The completed instruments and consent forms were filed in a locked cabinet located in a locked room for 3 years. At the end of 3 years, the instruments and the consent forms will be shredded and the electronic dataset will be deleted from the desktop and from the portable external drive.

Chapter 4

Analysis of the data

The purpose of the study was to test the relationships among (1) psychological job demand, physical job demand, job control and job stress; (2) psychological job demand, physical job demand, social support, and job stress; and (3) to test the moderating effect of job control and social support on the relationship between psychological job demand, and job stress, and between physical job demand and job stress among registered nurses working in skilled nursing facility (nursing homes). The final sample consisted of 158 registered nurses. Job stress was measured using the Job Stress Scale (Parker & DeCotiis, 1983), psychological job demand was measured using the JCQ Psychological Job Scale (Karasek, 1985), physical job demand was measured using the JCQ Physical Job Demand Scale (Karasek, 1985), job control was measured using the JCQ Decision Latitude Scale (Karasek, 1985), and social support was measured using the JCQ Social Support Scale (Karasek, 1985). This chapter presents the findings obtained from data analysis.

Statistical Description of the Variables

Descriptive statistics of the responses to the instruments used to measure the five variables in this study were analyzed and presented in Table 2. The range of scores on Job Stress Scale was 13 to 64 ($M = 37.69$, $SD = 9.92$). The range of scores on JCQ Psychological Job Demand was 3 to 20 and on the Physical Job Demand was 7 to 20. The range of scores on JCQ Decision Latitude and Social Support were 40 to 92 and 11 to 22, respectively. All variables were examined for skewness and kurtosis of the population distribution using Fisher's measure and all variables are within -1.96 to 1.96, hence, responses on all variables were normally distributed (Munro, 1997). Thus, this

group of 158 registered nurses working in nursing homes, on the average, had moderate level of job stress, moderate level of psychological and physical job demands, a high level of job control and a high level of supervisor social support.

Table 2

Descriptive Statistics of the Study Variables

Variable	M	Mdn.	SD	Range		Skew
				Potential	Actual	
Job Stress	37.7	37	9.92	13-65	13-64	.122
Psychological Job Demand	11.2	11	3.52	-6-21	3-20	.230
Physical Job Demand	12.7	13	2.36	5-20	7-20	.370
Job Control	66.8	68	7.99	24-96	40-92	-.224
Total Social Support	22.9	23	3.29	8-32	11-32	-.235
Supervisor Support	11.3	12	2.26	4-16	4-16	-.587
Co-worker Support	11.5	12	1.55	4-16	7-16	.216

Psychometric Properties of the Instruments

A Cronbach's alpha coefficient, as a measure of internal consistency reliability, was computed for each instrument used in this study. The results are presented in Table 3. Most of the instruments demonstrated coefficient alphas for internal consistency reliability higher than .70, which is the minimum accepted level for instrument reliability (DeVellis, 2003; Nunnally & Berstein, 1994). The 13 item Job Stress Scale had a coefficient of .91 which is higher than the ones reported in previous studies (Jamal & Baba, 2000; Parker & DeCotiis, 1983). The reliability coefficient of Psychological Job Demand was .78 which is similar to the one reported by Trinkoff, Lipscomb, Geiger-Brown, Starr and Brady (2003). The obtained coefficient alpha of Physical Job Demand was .75 which is lower than the one reported by Trinkoff et al. (2003). The reliability coefficient obtained for Job Control Scale was .67 which is lower than the ones reported in previous studies (Karasek, et al. 1998; Landsbergis, 1988). The Cronbach's alpha

obtained for Total Social Support Scale was .84, for the supervisor support subscale was .89, and for the co-worker support subscale was .70. These results were comparable to the ones reported by Karasek et al. (1998) and Landsbergis (1988).

Table 3

Psychometric Properties of the Study Variables

Instruments	α
Job Stress Scale	.91
JCQ Psychological Job Demand	.78
JCQ Physical Job Demand	.75
Job Control Scale	.67
JCQ Total Social Support	.84
Supervisor support subscale	.89
Co-worker support subscale	.70

Results of Hypotheses Testing

Hypotheses 1, 2 and 3 were tested using the Pearson Product-Moment Correlation (Table 4). In line with conservative approach, two-tailed test of significance set at .05 level was used even if the hypothesized relationship is directional (Polit & Beck, 2004). Hypotheses 4 and 5 were tested using a two-step hierarchical multiple regression analysis as described by Baron and Kenney (1986) and Bennett (2000) to test for moderation effects. The level of significance was set at .05. All demographic data were found to be uncorrelated with job stress in this study. The Predictive Analysis Software (PASW) Statistics GradPack 17.0 for Windows (SPSS Inc., 2009) was used to analyze the data. The results of hierarchical regression analyses are presented in Table 5, Table 6, Table 7 and Table 8.

Table 4

Summary of Intercorrelations between Study Variables

Variable	1	2	3	4	5	6	7
1. Job Stress	--						
2. Psychological Job Demand	.587**	--					
3. Physical Job Demand	.412**	.530**	--				
4. Job Control	-.072	.066	-.063	--			
5. Total Social Support	-.365**	-.186*	-.168*	.293**	--		
6. Supervisor Support	-.350**	-.175*	-.150	.237**	.910**	--	
7. Co-worker support	-.264**	-.139	.138	.277**	.795**	.472**	--

Note: * $\rho < .05$. ** $\rho < .01$ two-tailed test of significance

Hypothesis 1.

Hypothesis 1 derived from the theoretical framework discussed in chapter two stated that increased psychological and physical job demand is related to increased job stress in staff nurses working in skilled nursing facilities. The Pearson Product-Moment correlation testing this relationship was $r = .587$, $\rho = < .01$ between psychological job demand and job stress, and $r = .412$, $\rho = < .01$ between physical demand and job stress. Both positive correlations were statistically significant, thus, hypothesis 1 was supported.

Hypothesis 2.

Hypothesis 2 stated that increased job control is related to decreased job stress in staff nurses working in skilled nursing facilities. The Pearson Product-Moment correlation testing this relationship was $r = -.072$, $\rho = .37$). The negative relationship between job control and job stress was not significant, hence, hypothesis 2 was not supported.

Hypothesis 3.

Hypothesis 3 developed from the theoretical proposition stated that increased social support is related to decreased job stress in staff nurses working in skilled nursing facilities. The Pearson Product-Moment correlation obtained was $r = -.365$, $\rho = < .01$ for

Total Social Support, $r = -.350$, $\rho = < .01$ for Supervisor Support subscale, and $r = -.264$, $\rho = < .01$ for Co-worker Support subscale. Therefore, hypothesis 3 was supported.

Hypothesis 4.

Hypothesis 4 was derived from the theoretical proposition that job control ameliorates the effect of psychological and physical job demands on job stress in staff nurses working in skilled nursing facilities. A two- step hierarchical multiple regression analysis testing moderator effect was conducted as suggested by Baron and Kenny (1986) and Bennett (2000).

In the first step, job stress was regressed on the independent variable, psychological job demand, and on the moderator variable, job control, to predict the dependent variable. The independent and moderator variables do not have to be significant predictors of the dependent variable to test for an interaction (Bennett, 2000). In the second step, the product term, also known as the interaction term, of psychological job demand and job control was entered into the model (Table 5). This interaction term between the independent and moderator variables represents an additional variance in the dependent variable not accounted for by either one alone (Baron & Kenney, 1986; Bennett, 2000). A moderator effect is present if the interaction term is a significant predictor of the dependent variable when entered into the regression equation (Bennett, 2000; Norusis, 2008; Stevens, 2002). The interaction term of psychological job demand and job control was not a significant predictor of job stress in staff nurses working in nursing homes, $\beta = .031$, $\rho = .641$.

Table 5

Heirarchical Multiple Regression Analyses Predicting Job Stress from Psychological Job Demand and Job Control

Predictor	ΔR^2	β
Step 1	.357**	
Psychological Job Demand		.594**
Job Control		-.111
Step 2	.001	
Psychological Job Demand		.596**
Job Control		-.115
(Psychological Job Demand X Job Control)		.031

Note: ** p = .000

The procedure was repeated to test the moderating effect of job control on physical job demand in predicting job stress (Table 6). When entered into the regression equation, the interaction term, physical demand and job control, was not a significant predictor of job stress in staff nurses working in nursing homes, $\beta = .054$, $p = .462$. These findings did not support the theoretical proposition that job control moderates the effects of psychological and physical job demands on job stress in staff nurses working in nursing homes. Therefore, hypothesis four was not supported.

Table 6

Heirarchical Multiple Regression Analyses Predicting Job Stress from Physical Job Demand and Job Control

Variable	ΔR^2	β
Step 1	.172**	
Physical Job Demand		.409**
Job Control		-.046
Step 2	.003	
Physical Job Demand		.414**
Job Control		-.046
(Physical Job Demand X Job Control)		.054

Note: ** p = .000

Hypothesis 5.

Hypothesis 5 was derived from the theoretical proposition that social support moderates the effect of psychological and physical job demands on job stress in staff nurses working in nursing homes. A two- step hierarchical multiple regression analysis testing the moderator effect was used. In the first step, the independent variable psychological job demand and the moderator social support was entered into the model as predictors of job stress. Next, the interaction term of psychological job demand and social support was entered into the model as the second step (Table 7). When entered in the regression equation, the interaction term was not a significant predictor of job stress in staff nurses ($\beta = -.053$, $p = .415$).

Table 7

Heirarchical Multiple Regression Analyses Predicting Job Stress from Psychological Job Demand and Social Support

Variable	ΔR^2	β
Step 1	.412**	
Psychological Job Demand		.537**
Social Support		-.265**
Step 2	.003	
Psychological Job Demand		.527**
Social Support		-.253**
(Psychological Job Demand X Social Support)		-.053

Note: ** $p = .000$

The procedure was repeated to test the moderation function of social support on the effect of physical job demand on job stress (Table 8). When entered into the regression equation, the interaction term of physical job demand and social support was not a significant predictor of job stress in staff nurses working in nursing homes ($\beta = .066$, $p = .351$). These findings did not support, as theorized, that social support moderates the effects of psychological and physical job demands on job stress in staff nurses working in nursing homes. Therefore, hypothesis five was not supported.

Table 8

Heirarchical Multiple Regression Analyses Predicting Job Stress from Physical Job Demand and Social Support

Variable	ΔR^2	β
Step 1	.260**	
Physical Job Demand		.361**
Social Support		-.305**
Step 2	.004	
Physical Job Demand		.360**
Social Support		-.318**
(Physical Job Demand X Social Support)		.066

Note: ** $p = .000$

Additional Findings

Study findings indicate, in support of theory, that significant correlates of job stress include physical demand, psychological demand, co-worker social support, and supervisor social support. Therefore, these independent variables were entered simultaneously as predictors in a multiple regression analysis to determine which predictors exerted the greatest effect on nurses' perceived job stress. Among these variables, only psychological job demand ($B = .477, p = .000$) and supervisor support ($B = -.211, p = .003$) emerged as significant predictors, explaining 41% of the variance in job stress.

In re-examination of theory, it is noted that theorists propose a mediational model of supervisor social support in which work stressors mediate the relationship between supervisor social support and job stress (Beehr & McGrath, 1992; Viswesvaran et al., 1999). Theory explains that by providing social support, such as assisting the employee in performing their work, revising due dates, or by redefining role expectations, the supervisor reduces the employees' psychological job demands, and thereby, job stress. Therefore, reduction in psychological demand is theorized to be an operant mechanism,

or mediator, by which supervisor support reduces job stress (Kaplan et al., 1977). To test the mediating effect of psychological demand in the relationship between supervisor support and job demand, three regression equations were conducted in accordance with the mediation testing procedure proposed by Baron and Kenny (1986). The first equation regressed psychological demand on supervisor support ($\beta = -.175, p = .02$). Supervisor support explained 3.1% of the variance in psychological demand. The second equation regressed job stress on supervisor support ($\beta = .350, p = .000$). Supervisor support explained 12.3% of the variance in job stress. The third equation regressed job stress on both psychological demand and supervisor support. The final equation found that the variance in job stress significantly explained by supervisor support decreased from 12.3% to only 6.5%; therefore, psychological demand partially mediated the relationship between supervisor support and job stress in staff nurses working in nursing homes.

Bennett (2000) also suggests that if the relationship between the independent variable and outcome variable is weak or inconsistent, a moderator variable may be present explaining when the association is strengthened or weakened. In contrast to theory and previously published studies, no relationship was found between job control and job stress in the current study. A re-examination of the theoretical framework from which the propositions were derived indicated that, in adding social support as the third dimension in JDCS theory, Johnson (1989) proposes that supervisor support moderates the relationship between job control and job stress. When support is present, job control reduces the effect of job demands on job stress. When support is absent, job control no longer functions to reduce the impact of job demands on job stress.

A two step hierarchical multiple regression analysis was conducted to test the moderating function of supervisor support on the relationship between job control and job stress. In the first step, job stress was regressed on both supervisor support and job control. In the second step, the interaction term (product of job control and supervisor support) was included in the model (Table 9). The interaction term was a significant predictor of job stress in staff nurses working in nursing homes ($\beta = -.202$, $\rho = .007$). Thus, supervisor support strongly moderates the effect of job control on job stress in this data. To reduce multicollinearity that may occur when the variables being multiplied are highly correlated, the predictor and the moderator variables were centered by subtracting the sample mean from the respective variables before the multiple regression analysis was conducted (Kim, Kaye & Wright, 2001; Major, Zubek, Cooper, Cozzarelli & Richards, 1997).

The two step hierarchical regression analysis was repeated using co-worker support as the moderator. The interaction term of co-worker support and job control was not a significant predictor of job stress in this data ($\beta = -.297$, $\rho = .783$). Thus, co-worker support does not moderate job control in predicting job stress in this study.

Table 9

Heirarchical Multiple Regression Analyses Predicting Job Stress from Job Control and Supervisor Support

Variable	ΔR^2	β
Step 1	.123**	
Job Control		.012
Supervisor Support		-.353**
Step 2	.040**	
Job Control		.009
Supervisor Support		-.373**
(Job Control x Supervisor Support)		-.202*

Note: ** p = .000 *p = .007

Chapter 5

Discussion of the Findings

Working with management to reduce stress in the workplace is a key goal of occupational health nursing practice. Therefore, the purpose of this study was to examine the relationships among job demand, job control, social support at work and job stress in staff nurses working in nursing homes. The findings are discussed in this chapter in light of the theoretical propositions derived from theories of job stress (Jamal, 2007; Parker & DeCotiis, 1983), job demand (Karasek, 1979, 2008; Theorell & Karasek, 1996), job control (Karasek, 1979, 1997; Spector, 2002; Theorell & Karasek, 1996), and social support at work (House, 1981; Johnson, 1989; Cohen, Gottleib & Underwood, 2000).

Theorists concur that perceived undesirable work characteristics contribute to feelings of job stress among individuals (Apply & Trumbull, 1987; Clegg, 2001; Karasek, 1979; Lovallo, 2005; Parker & DeCotiis, 1983). One of these undesirable work characteristics is in the form of high psychological and physical job demand. The individual perceives an imbalance between the demand of workload to be accomplished and one's capability or resources to respond adequately resulting to negative feelings or job stress (Beerh & Newman, 1978; Burrows & McGrath, 2000; Kinman & Jones, 2005; McGrath, 1970). Based on theoretical and empirical literature, a positive relationship between psychological and physical job demand and job stress was hypothesized.

Theorists propose that one's perception of the ability to influence one's work environment exerts a direct ameliorating effect on job stress as well as buffering function on the impact of high job demands on job stress (Karasek, 1979; Spector, 2002; Theorell & Karasek, 1996). Job control or decision latitude is having freedom and discretion over

work schedules and the ability to determine appropriate skills to carry out the work (Frese, 1989; Ganster, 1989; Karasek, 1979). The perception of having personal control over one's job and the ability to establish a less threatening or a rewarding work situation contributes to positive feelings over the job (Fox et al., 1993; Ganster, 1989; Logan & Ganster, 2005; Soderfeldt et al., 1996). Thus, as theorized, a negative relationship between job control and job stress was hypothesized.

In addition to the direct effect of job control on job stress, theorists also propose that having high levels of job control moderates the effects of environmental stressors on one's feelings of job stress (Bakker et al., 2007; Hobfoll, 1989). With high decision latitude or job control, the worker is able to execute appropriate physical and psychological reactions effectively utilizing appropriate potential energy elicited during job demands (Karasek, 1979, 1997, 2008). Thus, as theory proposed, a moderating function of job control on the effect of psychological and physical job demand was hypothesized.

Organizational factors such as social support in the form of co-worker and supervisor support represent extra resources for the individual in meeting high job demands (Hobfoll & Shirom, 2001; House, 1981; Johnson & Hall, 1989). Categorized as either functional or structural, social support is one psychological factor that protects the individual from the effects of noxious or unpleasant job situation (Egbert et al., 2006; Kaplan et al., 1977). Theorists propose a direct and inverse effect of social support when job stress level is reduced with the presence of supervisor and co-worker support providing specialized relationship such as nurturance and emotional support on the job (Hobfoll & Shirom, 2001; House, 1981; Lakey & Cohen, 2000; Weiss, 1974, 1998).

Based on the theoretical proposition, a negative relationship between social support, in the form of supervisor and co-worker support, and job stress was hypothesized.

In addition to the inverse direct effect of social support on stress, theorists hypothesize the buffering effect of social support on the relationship between high job demand and job stress (House, 1981; Johnson & Hall, 1988; Karasek & Theorell, 1990). Supportive supervisor and co-worker provide not only emotional support but also extend actual help such as instrumental, informational, as well as appraisal support to the individual assisting the individual in developing and implementing actions that address the high job demands (Johnson & Hall, Karasek, 1979, 1997; Theorell & Karasek, 1996). As theorized, the moderating effects of social support in the form of supervisor and co-worker support, was hypothesized.

Job demand and Job Stress

Hypothesis 1 stated that increased psychological and physical job demand is related to increase in job stress in staff nurses working in nursing homes. The hypothesis and the theoretical proposition from which it was derived were supported by data. The hypothesis was derived from the theoretical literature that posits a positive relationship between job demand and job stress (Kahn & Byosiere, 1990; Karasek, 1979, 1997; Karasek & Theorell; Payne, 1979). This finding is consistent with the findings of previous research (Mikkelsen et al., 2005; Pal & Saksvik, 2008; Schaubroeck et al., 2000).

Job demand was measured using the psychological and physical job demand scales of the Job Content Questionnaire (Karasek, 1985) and job stress was measured using the Job Stress Scale (Parker & DeCotiis, 1983) and a significant positive

relationship was found, ($r = .59$, $p = <.01$) for psychological job demand, and ($r = .412$, $\rho = <.01$) for physical demand. The strength of the relationship was strong positive and the probability was high, minimizing the chance of type I error. This finding also provides support to the theory explaining the relationship between job demand and job stress.

Job Control and Job Stress

Hypothesis 2 stated that increased job control is related to decrease in job stress in staff nurses working in nursing homes. The hypothesis and the theoretical proposition from which it was derived were not supported by the data. This finding was not consistent with previous research (Bradley, 2007; Brunborg, 2008; Hall, 2007; Xie, 1996). Although the relationship was in the inverse direction as theorized, the data did not reach significant level ($r = -.072$, $\rho = .370$).

Methodological problems may have occurred such as the choice of instrument to measure job control in staff nurses working in nursing homes that could have contributed to failure to support the theoretical proposition. Theorists have suggested context specificity when conducting work related stress research (Karasek, 1985, 1997; McClenahan, Giles & Mallett, 2007). Theorists also postulate that different jobs differ in the type and amount of control the employees are allowed and that perceive job control is effective in reducing perceived job stress when control is over that certain potentially stressful situation (Karasek, 1985; Spector, 2002). In this study, the registered nurses demonstrated high scores on the JCQ Job Control Scale that measures ones ability to determine when and how to do the tasks (Karasek, 1985). There is a need to measure the level of job control of nurses outside of the task itself. More decision authority items measuring job control at the organizational level, and skill variety items specific to the

actual role of the staff nurses in the nursing homes may need to be included to expand the scope of the Job Control Scale.

One other reason for failure to support the theorized relationship between job control and job stress could be due to the theorized presence of other factors at work such as social support that may moderate the relationship between job control and job stress (Hall, 2007; Pal & Saksvik, 2008; Johnson, 1989). Other studies have also reported a lack of a significant inverse relationship between job control and job stress and recommended inclusion of supervisor support for further investigation (Mikkelsen et al., 2005; Pal & Saksvik, 2008; Perrewe & Ganster, 1989; Schaubroeck et al., 2000). The theorists postulate that job control is significantly related to job stress when supervisor support is present. Bennett (2000) also suggests that a moderator may be present, which explains when a significant relationship may occur, if the association between the independent variable and the outcome variable is weak or inconsistent. The moderator variable may be uncorrelated with both the independent and outcome variable (Baron & Kenny, 1986). In this study, when tested alone, job control was uncorrelated with jobs stress but positively correlated with supervisor support ($r = .237, p = <.01$). Thus, the theorized moderating relationship between supervisor support and job control on job stress was tested and supported by the data. As theorized, job control was significantly related to job stress in the presence of high levels of supervisor support.

Social Support and Job Stress

Hypothesis 3 stated that increased social support is related to decrease in job stress in staff nurses working in nursing homes. The hypothesis and the theoretical proposition from which it was derived were supported by the data. The hypothesis was

derived from the theoretical literature that postulates a direct and inverse relationship between social support and job stress (Cohen et al., 2000; Johnson, 1989; House, 1981; Karasek & Theorell, 1990). This finding is consistent with previous research (Brunborg, 2008; Morano, 1993; Orpen, 1992).

Social Support was measured using the social support scale consisting of supervisor support and co-worker support of the Job Content Questionnaire (Karasek, 1985), job stress was measured using the Job Stress Scale (Parker & DeCotiis, 1983), and a significant inverse relationship was found. The strength of the negative relationship was moderately strong, ($r = -.35$, $\rho = .000$) for supervisor support and ($r = -.26$, $\rho = .000$) for co-worker support and the probability was high minimizing the chance of type I error. This finding also indicates that the underlying theory serves as an explanation of the relationship between social support at work and job stress.

Job Control, Psychological and Physical Job Demand and Job Stress

Hypothesis 4 stated that job control will moderate the relationship between psychological and physical job demand and job stress in staff nurses working in nursing homes. Neither this hypothesis nor the theoretical proposition from which it was derived was supported by the data.

Re-examining the theoretical framework from which the hypothesis was derived showed that the moderating mechanism of job control is explained by theorists as occurring in several points of the demand–stress model, most importantly during the condition of high job demand. Having high decision latitude, the individual is able to choose the appropriate coping mechanism that helps reduce the individual's perception of the environment as stressful (Frese, 1989; Karasek, 1979; Spector, 1998, 2002). This

theoretical framework proposes perception of job control over the specific job stressor itself. Job control would not be an effective moderator of job demand and job stress relationship unless such control is perceived to be effective in reducing high job demand. Hence, job control over tasks is not an effective moderator of the relationship between job demand and job stress if such demand is coming from sources outside of the task itself (Spector, 2002).

Social Support, Psychological and Physical Job Demand and Job Stress

Hypothesis 5 stated that social support will moderate the relationship between psychological and physical job demand and job stress. Neither this hypothesis nor the theoretical proposition from which it was derived was supported by the data. This finding was not consistent with previous research (Orpen, 1992).

According to Bennett (2000), the moderator or mediator function of a variable is sometimes difficult to distinguish as theoretically proposed. Using the variable as a mediator or moderator in a hypothesis would largely depend upon the researcher's interpretation of the theory. To further understand the theoretical relationship among the variables, the mediating effect between psychological job demand and social support were tested. This study supported the mediating relationship between psychological job demand and supervisor social support on job stress among staff nurses working in nursing homes.

Theorists describe psychological job demand as tasks requiring cognitive arousal, mental alertness, and mental work such as assessment and surveillance, information processing, problem-solving, decision-making, synthesis and organization of information (Karasek, 1979, 1997; 2008; Karasek & Theorell, 1990). In addition, organizational

constraints such as task completion deadlines requiring the individual to maintain a rapid pace of activities, as well as assignment of conflicting tasks are also components of psychological job demand (Kahn & Byosiere, 1990; Spector, 2002).

According to theories, the supportive supervisor provides informational support which helps reduce the psychological demand associated with information processing and decision-making; the supportive supervisor also provides instrumental support which helps reduce the psychological demands associated with task completion and meeting of deadlines (House, 1981; Johnson, 1989; Karasek & Theorell, 1990). Thus, based on theory, the supportive supervisor reduces employee's job stress by reducing their psychological demands. The reduction of stressor psychological job demand is the operant mechanism by which supervisor support reduces job stress. Therefore, in this study, reduced psychological demand mediated the relationship between supervisor support and job stress.

Chapter 6

Summary, Conclusions, Implications, and Recommendations

Summary

The purpose of this study was to examine the relationship among psychological and physical job demand, job control, social support at work and job stress among staff nurses working in nursing homes in the United States. Theoretical propositions derived from theories of job stress (Apply & Trumbull, 1987; Beehr & Newman, 1978; Clegg, 2001; Karasek, 1979; Lovallo, 2005; Parker & DeCotiis, 1983), psychological and physical job demand (Kahn & Byosiere, 1990; Karasek, 1979, 1997, 2008; Karasek & Theorell, 1990; Payne, 1979), job control (Bakker et al., 2007; Hobfoll, 1989; Karasek, 1979, 1997; Theorell & Karasek, 1996; Spector, 1998, 2002), and social support at work (Cobb, 1976; Egbert et al., 2006; Hobfoll & Shirom, 2001; House, 1981; Johnson, 1989) were tested in this study.

Job stress is theoretically defined as one's internal state of unpleasant emotions or reactions resulting from perceived undesirable work conditions that pose a threat to the individual (Jamal, 2007; Kahn & Byosiere, 1990; Parker & DeCotiis, 1983; Xie & Johns, 1995). Job demand is theoretically defined as work-related psychological or physical task requirements or workload, which include qualitative and quantitative demands (Karasek, 1979, 1997; Karasek & Theorell, 1990; Theorell & Karasek, 1996). Theorists posit a positive relationship between psychological job demand and job stress and between physical job demand and job stress (Karasek, 1979, 1997; Karasek & Theorell, 1990; Payne, 1979; Schabracq et al., 1996). Empirical literature supports this theoretical relationship (Schaubroeck et al., 2000; Mikkelsen et al, 2005).

Job control, or decision latitude, is defined as a worker's control over the performance of his or her job (Fox et al., 1993; Karasek, 1979, 1997; Karasek & Theorell, 1990). Theory posits an inverse relationship between job control and job stress (Frese, 1989; Ganster & Fusilier, 1989; Hobfoll, 1989; Johnson, 1989; Karasek, 1979, 1997; Karasek & Theorell, 1990; Langer, 1983). Moreover, theory posits that job control moderates the relationship between job demands and job stress (Hobfoll, 1989; Johnson, 1989; Karasek, 1979, 1997; Karasek & Theorell, 1990; Spector, 1998). Empirical literature supports an inverse relationship between job control and job stress (Brunborg, 2008; Xie, 1996), and the moderation effect of job control on the relationship between job demand and job stress (Perrewe & Ganster, 1989).

Social support at work is defined as all levels of helpful interaction available on the job from supervisors or co-workers (Johnson, 1989; Karasek & Theorell, 1990; 1996). Theory posits an inverse relationship between social support and job stress (Cobb, 1976; Hobfoll, 1989; House, 1981; Johnson, 1989; Karasek & Theorell, 1990). Moreover, theory posits that social support moderates the relationship between job demand and job stress (Hobfoll & Shirom, 2001; House, 1981; Johnson, 1989; Karasek & Theorell, 1990). Empirical findings has tested and supported the theorized relationship between social support and job stress (Geller & Hobfoll, 1994; Muncer et al., 2001; Orpen, 1992). Likewise, the moderation effect of social support on the relationship between job demand and job stress was tested in one study and supported (Orpen, 1992).

Based on the theoretical and empirical literature the following hypotheses were derived from this study:

1. Increased job demand is related to increased job stress in staff nurses working in skilled nursing facilities or nursing homes.
2. Increased job control is related to decreased job stress in staff nurses working in skilled nursing facilities or nursing homes.
3. Job control will moderate the relationship between job demand and job stress in staff nurses working in skilled nursing facilities or nursing homes.
4. Increased social support is related to decreased job stress in staff nurses working in skilled nursing facilities or nursing homes.
5. Social support will moderate the relationship between job demand and job stress in staff nurses working in skilled nursing facilities or nursing homes.

Participants were recruited on-site at nine (9) licensed nursing homes located in New York and New Jersey. The final sample consists of 158 staff nurses, mostly Asian (71.5%), have worked in their position for .7 to 41 years ($M = 16$, $SD = 11.4$), and majority holds a Baccalaureate in Nursing (34.2%).

Data were collected using (1) the Demographic Questionnaire developed by the investigator; (2) the Job Stress Scale (Parker & DeCotiis, 1983), (3) JCQ Psychological Job Demand and Physical Job Demand Scales (Karasek, 1985); (4) JCQ Job Control Scale (Karasek, 1985); and (5) JCQ Supervisor and C-worker Social Support Scales (Karasek, 1985).

Data were analyzed using the Predictive Analysis Software (PASW) Statistics GradPack 17.0 for Windows. Alpha coefficients were calculated for the instruments: the Job Stress Scale (Parker & deCotiis, 1983); the JCQ Psychological Job Demand Scale (Karasek, 1985); the JCQ Physical Job Demand Scale (Karasek, 1985); the JCQ Job

Control Scale; the JCQ Social Support Scale (Karasek, 1985); .91, .78, .75, .67, and .84, respectively. The alpha coefficients of the Social Support Subscales, Supervisor Support and Co-worker Support were also calculated to be .89 and .70, respectively. Descriptive statistics were used to analyze the data describing the characteristics of the sample.

Pearson's Product Moment correlation was used to examine the interrelationships between the study variables and to test hypotheses one to three; hierarchical multiple regression was used to test hypotheses four and five. The level of significance at which the research hypotheses were tested was at .05.

The first hypothesis which stated that increased psychological and physical demand is related to increased job stress in staff nurses working in nursing homes was supported. This study is the first study to have examined this relationship in staff nurses working in nursing homes thus extending this knowledge. The second hypothesis which stated increased job control is related to decreased job stress in staff nurses working in nursing homes was not supported. The third hypothesis which stated that increased social support is related to decreased job stress in staff nurses working in nursing homes was supported extending this knowledge to staff nurses working in nursing homes. The fourth hypothesis which stated that job control moderates the effect of psychological and physical job demands on job stress in staff nurses working in nursing homes was not supported. The fifth hypothesis which stated that social support moderates the effect of psychological and physical job demands on job stress in staff nurses working in nursing homes was not supported.

In summary, theoretical propositions were tested to explain job stress in a sample of staff nurses working in nursing homes. The theoretical propositions tested explained

the relationships among the psychological job demand, physical job demand, job control and social support among staff nurses working in nursing homes.

Conclusion

The findings of this study support as hypothesized that theoretical relationships exist between job demand, psychological and physical, job control, and social support, supervisor and co-worker. The findings support a positive relationship between psychological and physical job demand and job stress. The findings also support an inverse relationship between supervisor and co-worker social support and job stress. Among the variables tested, psychological job demand and supervisor social support were the strongest predictors of job stress in staff nurses working in nursing homes.

Contrary to the hypotheses, the findings of this study did not support the theoretical propositions that increased job control is related to decrease in job stress and that job control moderates the relationship between job demand and job stress in staff nurses working in nursing homes. Findings indicated a positive relationship between job control and supervisor social support. Further analysis indicated that the interaction between supervisor support and job control contributes a significant amount of variance on job stress over and above the variance explained by both. This findings support the theoretical proposition explaining the role of supervisor support on job control in ameliorating job stress

Contrary to the hypothesis, the findings of this study did not support the theoretical propositions that social support moderates the relationship between job demand and job stress in staff nurses working in nursing homes. Further analyses indicated that psychological demands mediated the relationship between supervisor

support and job stress. According to theories, the supervisor provides instrumental support which helps reduce the psychological demand associated with information processing and decision-making; the supportive supervisor provides informational support which helps reduce the psychological job demands associated with meeting of deadlines. Psychological demand is an operant mechanism by which supervisor support reduces job stress. Therefore, this study supported the theoretical proposition that reduced psychological demand mediates the relationship between supervisor support and job stress in staff nurses working in nursing homes.

Implications for Nursing

Job stress has been shown to be a serious threat to the mental and physical health of employees, resulting in such conditions as depression, somatic complaints, sleep disorders, cardiac disease, and increased incidence of accidents and injuries (Hellerstedt & Jeffrey, 1997; Karsh et al., 2005; Searle et al., 2001; Otsuka et al., 2009; Shirom, Oliver & Stein, 2009). Not surprisingly, job stress has also been associated with higher absenteeism health care costs (Caitlin et al., 2008; Ganster et al., 2001; Manning et al., 1996). Consequently, employee stress is a serious concern for the National Institute of Occupational Safety and Health (NIOSH) and for occupational health nursing, as a professional specialty. It is in the scope of practice of occupational health nurses to not only recognizing employees suffering from high levels of job stress in the workplace, but to also play a key role in working with management to implement strategies and initiatives to reduce job stress in the workplace (Sadler, 2009). Therefore, it is paramount that occupational health nursing practice is informed by theory-based research that quantifies the predictors, mediators, and moderators of job stress. It is through the

advancement of nursing's scientific knowledge that evidence-based strategies can be designed and implemented to address the growing problem of job stress.

Healthcare workers including registered nurses are no exception to the potential damaging effects of job stress (AbuAlRub, 2004; Aiken et al., 2002; Flynn et al., 2009; Gelsema et al., 2006). Empirical evidence also indicates that registered nurses working in skilled nursing facilities, or nursing homes, are at risk for high job demands, or workload, and job stress-related injuries and illness (Flynn, 2007; Trinkoff et al., 2005). By testing the theorized relationships among job demand, job control, social support and job stress, this study helps to explain the operant mechanisms by which job stress can be reduced, and enhances awareness and understanding of job stress among staff nurses working in nursing homes.

Better understanding of the contributors to job stress in nurses is important, however, not only due the negative impact of job stress on nurses' health, but also on the safety and quality of care of the patients they serve. Theory proposes that job stress results in poorer work performance and job outcomes (Karasek, 1979, 1997; Karasek & Theorell, 1990; Theorell & Karasek, 1996). Therefore, job stress may theoretically present a threat to the quality of care that nurses provide.

Interestingly, the findings of this study challenge some prevailing assumptions about the stresses encountered by nurses practicing in nursing homes. It is frequently assumed that the physical demands of nurses' working in a nursing home are the most challenging for this group of employees at risk for job stress (Engels et al., 1994; OSHA, 2009; Van den Tooren & de Jonge, 2008). The findings from this study, however, found

that psychological job demands were the strongest predictor of job stress among RNs working in nursing homes.

Another prevailing assumption is that work in nursing homes is monotonous, repetitive, that nurses working in nursing homes perceive little if any control over their jobs (OSHA, 2009), and that job control, if present, would reduce their job stress. In contrast, however, the findings from this study found that nurses' perceptions of their job control were relatively high. Again, among the three predictors of job stress explored in this study, (1) psychological demand, (2) physical demand, and (3) job control, it was psychological job demand that was found to be the most significant predictor of job stress.

Therefore, study findings indicate that initiatives to reduce psychological demand among RNs working in nursing homes are needed. Study findings also provide guidance as to which strategies might be useful in achieving this goal. This study found that a supportive supervisor significantly reduced psychological job demand and was significantly and inversely related to job stress.

Although this finding provides empirical support for a key tenant of the Magnet Accreditation Program (Kramer, Schmalenberg, & Maguire, 2010), which stresses the importance of a supportive supervisor, this finding also has serious implications for institutional and public policy. Although vitally important to the support of their nursing staff, prior research indicates that many, if not most, nurse supervisors are lacking in supervisory and managerial skills and are not perceived as supportive by their nursing staff (McLarty & McCartney, 2009). A recent survey of over 9,000 staff RNs, many of whom practiced in nursing homes, found that 40% of RNs reported that their frontline

nurse manager was not supportive of their nursing staff, 42% reported that their nurse manager would not back them up in a conflict with a physician and 43% of the nurses concluded their nurse manager did not have the skills to be a competent manager (Flynn, 2007).

Given the importance of a supportive nursing supervisor in reducing nurses' job stress, as findings from this study indicate, it is extremely unfortunate that many nursing supervisors are lacking these skills. Therefore, these findings lend support to state-level policy recommendations that legislatures mandate and/or subsidize managerial training for all frontline nursing managers as initiatives to improve the skills and capacity of the nursing workforce (Dickson & Flynn, 2009).

At the organizational-level, the importance of a supportive supervisor in reducing job stress, as indicated by these study finding, should prompt skilled nursing facilities to adopt policies providing ongoing continuing education to develop the managerial and team building skills of their nurse supervisors (McLarty & McCartney, 2009). Previous research indicates that only 57.7% of frontline managers report having either a diploma or an associate degree, so that many supervisors may not have received formal management skills training before being promoted (Flynn, 2007). Therefore, as Baer (2006) suggests, investing in management education and training of nursing supervisors is one cost saving measure for a nursing home not only in terms of increasing productivity and positive patient outcomes, but also of the reduction in turnover, which could cost nursing homes an average of 25% of annual salary of the replaced employee (Seavy, 2004). Facility policy need to address a mandatory supervisory skills orientation

for new front-line managers, and an on-going advanced leadership training for senior management staff in nursing homes.

This study found no support for the theorized relationship between job control and job stress but found a significant positive relationship between supervisor support and job control. Again, policy recommendations center on building the skills and capacity of frontline supervisors in providing the support to enhance employees' job control. An additional consideration would be to redesign work flow in ways that increase the interaction opportunities between staff and their supervisor (Pekkarinen et al., 2006). Interaction with a supportive supervisor facilitates information and feedback support to employees regarding correct performance, reinforces the development of skills, and consequently, increases employees' perception of job control needed in performing required tasks and in meeting deadlines (Olofsson, Bengtsson & Brink, 2003; Park, Wilson & Lee, 2004).

Although the effect of co-worker support on job stress was markedly less than that of supervisor support, it was nonetheless inversely and significantly correlated with job stress and should be considered. Therefore, to reduce job stress among staff RNs, facilities should adopt and implement initiatives to increase co-worker support through involvement in unit projects as a team, such as projects concerning improvement in communication and patient care outcomes (Heaney et al., 1993; Kallisch, Lee & Salas, 2010). Moreover, high psychological job demand or workload has been associated with patient safety issues due to missed important changes in patient condition or inadvertent omission of care brought about by frequent interruptions before work can be completed (Bowers et al., 2001; Flynn, 2007). Team building facilitates proper allocation of tasks

among co-workers, promote cooperation to meet deadlines, and enhance situation monitoring so as to identify periodic surge in workload or job demand, and most importantly, identify work conditions that may interfere with task completion (Bowers et al., 2001; Isaksson et al., 2008; Rodwell et al., 2009).

Nurses practicing in nursing homes face new psychological job challenges, including budget and staffing constraints, an aging population that increases census and workload, and a corresponding aging nursing workforce (Martiniano et al, 2010). Staff nurses in nursing homes, now more than ever, require supervisor support in dealing with patients' increasingly complex medical problems and behaviors (Moniz-Cook, Woods & Gardiner, 2000). In light of the rising patient acuity in nursing homes, a potential strategy to reduce nurses' psychological demands might be the inclusion of an advanced practice nurse in gero-psychiatric nursing that could assist the RNs in the assessment and care planning of the more difficult and complex patients residing in nursing homes. .

Recommendations for Future Research

Based on the findings of this study, recommendations for future research include:

1. Replicate the study in a sample of nurse managers/supervisors in nursing homes. The predictors of job stress among managers in nursing homes have not been studied. Therefore, exploring and explaining job stress among this group would address gaps in knowledge.
2. Replicate the current study in samples of other nursing personnel directly involved in patient care in nursing homes such as licensed practical nurses, certified nurse aides and rehabilitation technicians. These groups are the co-workers of the staff nurse in nursing homes and provide instrumental support in times of high job demands.

3. The 9-items JCQ Job Control Scale demonstrated a low coefficient alpha in this study. The psychometric properties of the instrument need to be improved if used in future research. More items may be needed to be added to expand the scale to measure decision latitude at the organizational level. Qualitative research can be conducted to identify job control domains appropriate to staff nurses in nursing homes so that additional scale items can be developed.
4. High psychological job demand and job stress are theoretically and empirically associated with poorer employee performance and job outcomes. Therefore, future studies should explore the influence of psychological job demand and job stress of nurses in nursing homes on patient safety outcomes such as incidence of elopement, falls, development of pressure ulcers and/or prevalence of missed or omitted care in nursing homes.
5. Implement and test an intervention to enhance supervisor support based on a participatory management approach that would include staff participation in decision-making, mentoring opportunities, enhanced supervisor coaching skills, and performance appraisals designed to enhance staff competency and skills development.
6. Conduct a cost analysis of staff absenteeism, job-related accidents and injuries, and their impact on patient care outcome and reimbursements.

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Appendix A

Sample Letter to the Director of Nursing

Director of Nursing
Facility Name
Address

Date:

Dear (Director of Nursing),

This letter is a follow-up of our telephone/e-mail conversation. I want to thank you for your interest in supporting this study, and for your willingness to allow me to visit your facility for the purpose of inviting the nursing staff to participate in this research.

My dissertation research is focused on understanding the contributors to job stress in registered nurses working in long term care facilities. I will be looking at relationships among job demands, job control, social support and job stress.

My proposed sample is composed of male and female registered nurses who are working as staff nurses in skilled nursing facilities for at least six months, work at least 30 hours per week, and on permanent employment status. Upon meeting with the nurses, either I or my research assistant will explain the purpose of the study. Participation is voluntary, and consent for participation will be obtained from each participant. Each participant will be asked to complete three short questionnaires. The estimated time required to complete all questionnaires is approximately 15 minutes. The participants who complete the three short questionnaires will receive a small token and a thank you note in appreciation for their time and participation. A summary of findings will be made available to each facility when the study is completed.

Thank you again for your interest in supporting this study. I am contacting you shortly to further discuss a mutually convenient date, place, and time for my visit. If you have any question, please call me at 212-848-6198 or e-mail me at ca_almendra@yahoo.com.

Sincerely,

Cecil A. Almendra, MSN, RN
Doctoral Candidate
Rutgers College of Nursing

Appendix B

(SAMPLE AUTHORIZATION LETTER ON THE FACILITY'S LETTERHEAD)

Date _____

Erica Graser, J.D.
IRB/IACUC Administrator
Office of Research and Sponsored Program
Rutgers, The State University of New Jersey
3 Rutgers Plaza, ASB III
New Brunswick, NJ 08901
732-932-0150 ext. 2113 (ph)
732-932-0163 (fax)

Dear Ms. Graser,

This is a letter of authorization granted to Ms. Cecil A. Almendra, a Ph.D. candidate in the College of Nursing, Rutgers, The State University of New Jersey, to conduct her dissertation research in our facility. Specifically, I give support to Ms. Almendra to access our registered nurses at mutually agreed time and date. I understand that research participation of the nurses is voluntary and that anonymity will be ensured. Participants will be given three instruments to complete: a demographic data sheet, the Job Stress Scale and the Job Content Questionnaire. I also agree to provide additional information needed such as, the facility size, nursing staffing skill mix, and job function of the registered nurses. Anonymity of the facility is also safeguarded

I am pleased to support Ms. Almendra in her research project. If you have any question, please call me at #_____.

Sincerely,

(Authorized facility representative)

cc. Linda Flynn, Ph.D., RN

Appendix C

Consent Form to Participate in a Research Study

Title of the Study: Relationships between job demand, job control, social support and job stress in registered nurses working in long term care facilities.

Principal Investigator: Cecil A. Almendra, RN, MSN, Doctoral Candidate, Rutgers University, Newark

INTRODUCTION:

You are invited to participate in a research study. Before you agree to participate in this study, you should know enough about it to make an informed decision. If you have any questions, ask the investigator. You should be satisfied with the answer before you agree to be in the study.

BACKGROUND/PURPOSE:

The purpose of the study is to look at the relationships between job demand, job control, social support and job stress in 84 registered nurses working in long term care facilities. This study is being performed to provide a better understanding of the role of job demand, job control and social support on the perception of job stress.

INFORMATION:

If you agree to participate in the study, you will be asked to complete the following:

1. Sign two copies of the consent form, one for you and the other copy to be kept by the principal investigator.
2. Complete the demographic data collection tool
3. Complete two questionnaires relating to your work experience as registered nurse in your current employment.
4. Place completed questionnaire in an envelope and seal it, and return directly to the investigator or research assistant.

Participation in this study will involve about 15 minutes for the completion of the study instruments.

ALTERNATIVES TO PARTICIPATION:

The research is completely voluntary. There are no alternatives to participation.

RISKS:

There are no known risks by participating in this study.

BENEFITS:

Participation in this study may not benefit you directly. However, the knowledge that we obtained from your participation will benefit the nurses in the future by better understanding of the contributors to job stress.

Initials: _____

ANONYMITY:

This research is anonymous. Anonymous means that I will record no information about you that could identify you. This means that I will not record your name, address, phone number, date of birth or any information that may be directly linked to you.

COMPENSATION:

For participating in this study you will not receive monetary compensation. You will be given a small token in appreciation for completing the questionnaire. You may withdraw from the study prior to its completion without penalty or risk to present or future employment in a healthcare facility and you will be given a small token.

COST STATEMENT:

There will be no cost to you for participating in this research.

CONTACT:

If you have questions at any time about the research or the procedures, you may contact the researcher, Cecil A. Almendra at 212-848-6180 Monday through Friday 8A – 4P or at 201-439-1231 evenings and weekends. If you have any questions about your rights as a research subject, you may contact the IRB Administrator at

Rutgers University Institutional Review Board for the Protection of Human Subjects
Office of Research and Sponsored Programs
3 Rutgers Plaza
New Brunswick, NJ 08901-8559
Tel: 732-932-0150 ext. 2104
Email: humansubjects@orsp.rutgers.edu

PARTICIPATION:

Your participation in this study is voluntary; you may decline to participate at any time without penalty to you. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be removed from the data set and destroyed.

Sign below if you agree to participate in this research study. You will be given a copy of this form to keep.

Subject's signature _____ Date _____

Investigator's signature _____ Date _____

Appendix D
DEMOGRAPHIC DATA SHEET

Directions: Please, check one answer to each question and/or fill in the blanks.

1. Age in years: _____

2. Gender:
 - Male
 - Female

3. Race:
 - White
 - African- American
 - Asian
 - Latino
 - Other

4. Education, highest level completed:
 - RN Diploma
 - Associate Degree
 - Baccalaureate in Nursing
 - Baccalaureate in other field
 - Master's in nursing
 - Master's in other field
 - Doctorate in nursing
 - Doctorate in other field

5. Years in practice (fill in the blanks)

Since RN licensure _____

At this practice setting _____

6. Marital Status:

Single

Married

Divorced/ Separated

Widowed

7. Number of children under 6 living at home: _____

8. Shift work (select one)

days, 8 hour

evenings, 8 hour

nights, 8 hour

days, 12 hour

nights, 12 hour

9. Average hours work per week at this job: _____

10. Your Job Title: _____

11. Total annual wage or salary from this job including bonuses (select one)

less than \$30,000 / year

between \$30,000 and \$60,000 / year

between \$60,000 and \$100,000 / year

over \$100,000 / year

12. Current member of a union or professional collective bargaining unit
- Yes
 - No
 - Don't know
13. On the most recent day/shift you worked, how many residents were assigned to you? _____.
14. Was the number of residents assigned to you in question 13 typical of your workload?
- Less
 - Same
 - More
15. If you needed to change the hour when you start or end your workday, would it be possible?
- Very difficult
 - I could get changes approved for special situations
 - Yes, my schedule is already flexible

Appendix E
JOB STRESS SCALE

Directions: Please, circle the number that best describes your agreement with the following statement about your job.

	<u>Strongly Disagree</u>	<u>Disagree</u>	<u>Neutral</u>	<u>Agree</u>	<u>Strongly Agree</u>
1. Working here makes it hard to spend enough time with my family.	1	2	3	4	5
2. I spend so much time at work, I can't see the forest for the trees.	1	2	3	4	5
3. Working here leaves little time for other activities.	1	2	3	4	5
4. I frequently get the feeling I am married to the company.	1	2	3	4	5
5. I have too much work and too little time to do it in.	1	2	3	4	5
6. I sometimes dread the telephone ringing at home because the call might be job-related.	1	2	3	4	5
7. I feel like I never have a day off.	1	2	3	4	5
8. Too many people at my level in the company get burned out by job demands.	1	2	3	4	5
9. I have felt fidgety or nervous as a result of my job.	1	2	3	4	5
10. My job gets to me more than it should.	1	2	3	4	5
11. There are lots of times when my job drives me up the wall.	1	2	3	4	5
12. Sometimes when I think about my job I get a tight feeling in my chest.	1	2	3	4	5
13. I feel guilty when I take time off from job.	1	2	3	4	5

Appendix F
JOB CONTENT QUESTIONNAIRE

Directions: Please, answer each question by checking off the one answer that best fits your job situation. Sometimes none of the answers fits exactly. Please, choose the answer that comes closest.

1. My job requires that I learn new things.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

2. My job involves a lot of repetitive work.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

3. My job requires me to be creative.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

4. My job allows me to make a lot of decisions on my own.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

5. My job requires a high level of skill.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

6. On my job, I have very little freedom to decide how I do my work.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

7. I get to do a variety of different things on my job.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

8. I have a lot to say about what happens on my job.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

9. I have an opportunity to develop my own special abilities.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

10. My job requires working very fast.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

11. My job requires working very hard.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

12. I am not asked to do an excessive amount of work.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

13. I have enough time to get the job done.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

14. I am free from conflicting demands that others make.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

15. My job requires long periods of intense concentration on the task.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

16. My tasks are often interrupted before they can be completed, requiring attention at a later time.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

17. My job is very hectic.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

18. My job requires a lot of physical effort.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

19. I am often required to move or lift very heavy loads on my job.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

20. My work requires rapid and continuous physical activity.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

21. I am often required to work for long periods with my body in physically awkward positions.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

22. I am required to work for long periods with my head or arms in physically awkward positions.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

23. Waiting on work from other people or departments often slows me down on my job.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

24. My supervisor is concerned about the welfare of those under him.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

25. My supervisor pays attention to what I am saying.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

26. My supervisor is helpful in getting the job done.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

27. My supervisor is successful in getting people work together.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

28. People I work with are competent in doing their jobs.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

29. People I work with take a personal interest in me.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

30. People I work with are friendly.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

31. The people I work with are helpful in getting the job done.

- Strongly Disagree (1) Disagree (2) Agree (3) Strongly Agree (4)

Vita
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1956	Born August 9 in Bacolod City, Philippines
1971	Graduated, Cabarrus' Catholic College, Sipalay, Philippines
1976	BSN, Velez College, Cebu City, Philippines
1977 - 1979	Attended Graduate School in Education, Leyte State College
1977 - 1982	Staff Nurse, Abuyog General Hospital, Leyte, Philippines
1982 - 1984	Attended Law School, West Negros College, Bacolod City
1985 - 1987	Staff Nurse, Nursing Facility, Coler Memorial Hospital, New York
1986 – 1991	Staff Nurse, Medical-Surgical Unit, Astoria General Hospital, Astoria, New York
1987	Head Nurse, Coler Memorial Hospital, New York City
1988	Clinical Instructor, Medical- Surgical, Coler Memorial Hospital
1990	Patient Education Coordinator, Coler Memorial Hospital
1991	MSN, Hunter Bellevue School of Nursing, New York City
1993	Nursing Supervisor – ICU/ Medical Surgical, Coler Memorial
1993	Adjunct Faculty, Queensboro Community College, New York City
1994	Adjunct Clinical Instructor, Adelphi University, Garden City, NY
1994 – 1996	Assistant Professor, LaGuardia Community College, New York
1996	Assistant Director of Nursing, Hospital Division, Coler-Goldwater Memorial Hospital, New York City
1997 - 2003	Assistant Director of Nursing, Nursing Education, Long Term Care Division, South Manhattan Network, HHC, New York City
2004 - 2006	Associate Director of Nursing, Recruitment and Retention, Coler- Goldwater Hospital and Nursing Facility, New York City
2007 - present	Associate Director of Nursing/Director of Nursing Education and Staff Development, Coler-Goldwater Hospital and Nursing Facility
2010	Ph.D. in Nursing, Rutgers, The State University of New Jersey, Newark, New Jersey