A QUANTITATIVE CORRELATIONAL STUDY OF JOB SATISFACTION AMONG CRITICAL CARE NURSES IN HAWAII

by

Hazel Downing

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education in Educational Leadership

UNIVERSITY OF PHOENIX

March 2010

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Hazel Lawrence Downing

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Approved:

Raj Singh, Ph.D., Committee Chair

Anthony Kortens, Ph.D., Committee Member

Randy Caine, Ed.D., Committee Member

Accepted and Signed: _____ March 5, 2010
Raj Singh — Date

Accepted and Signed: _____ March 5, 2010
Anthony Kortens — Date

Accepted and Signed: _____ March 5, 2010
Randy Caine — Date

_____ March 18, 2010
Jeremy Moreland, Ph.D. — Date
Dean, School of Advanced Studies
University of Phoenix

ABSTRACT

One way of reducing nurse shortage and providing effective patient care within critical care units includes addressing the relationships between job satisfaction and nurse socio-demographics. The current quantitative correlational study identified a moderate level of overall job satisfaction among critical care nurses in Hawaii. The highest level of job satisfaction was in flexibility of scheduling and lowest in child care facilities. Rejection of the null hypothesis for six of the eight hypotheses suggested presence of a relationship between socio-demographics and the subscales of job satisfaction. The linear combination of the 10 socio-demographics does not predict the rewards and the professional opportunities subscale for critical care nurses currently working in Hawaii. The linear combination of the 10 socio-demographic variables predicts the scheduling, family and work balance, praise and recognition, coworkers, interaction opportunities, and the control and responsibility subscale for nurses currently working within critical care settings in Hawaii. Leadership implications from this study apply to nurse educators, preceptors, administrators, recruiters, and managers. Recommendations include addressing motivating factors and improving work settings of the critical care nurse to promote patient safety and retention of nurses.

DEDICATION

This study is dedicated to critical care nurses globally who work to provide safe patient care in a highly challenging and technological work environment. The commitment, tolerance to diversity, advocacy for the patients during practice in the critical care settings, and the overall performance of the critical nurse is phenomenal. I hope that this study will assist healthcare leaders to indulge in creative strategies to improve job satisfaction of critical care nurse, resulting in effective care of the critically ill patient through an improvement in retention and a reduction in nurse shortage.

ACKNOWLEDGMENTS

Working on my doctoral degree I developed a deep sense of responsibility, respect, and determination in creating a vision on ideals for our global community in critical care nursing and in educational leadership. Several distinguished and ordinary people served as role models in molding my curious inquiring mind by creating meaningful relationships which enriched my professional and personal life. First, with deep love and honor I thank my dad Lawrence and mother Sophia for supporting and valuing my education. I thank my family for allowing me to reach my goals especially my children Stephanie and Samantha who kept me amused with their humor and sacrificed many precious moments of their milestones. Without my family's acceptance, tolerance and understanding, I could not attain a higher level of education.

I would like to express my deepest appreciation to my mentor, Dr. Raj Singh, and committee members Drs. Anthony Kortens and Randy Caine who gave me the needed support, enrichment, counsel, and direction. My gratitude goes out to Dr. Tom Granoff for his patience, sincere encouragement, and assistance in statistics. I also extend my appreciation to all the critical care nurses who participated in my study, the hospitals that granted me permission, nurse managers, and to Iwalani Ohia for her help. I am deeply indebted to Christina Couchells and Marienne Vergara who supported me through all the storms of life. Overall, I thank everyone who became a part of my dreams and challenges. I also owe my success to the University of Phoenix for fostering a spirit of excellence in my current professional role as a practicing bedside critical care nurse and as an educational leader.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1: INTRODUCTION

Job satisfaction of registered nurses (RNs) has become a popular topic of recent research studies in healthcare within the United States (Gregory, Way, Brendan, Le Fort & Parfrey, 2007; Letvak & Buck, 2008; Schmalenberg & Kramer, 2008; Walker, 2008; Zangaro & Johatgen, 2009,) and globally (Lueng, Spurgeon & Cheung, 2007; Kane, 2009). Ongoing changes in the healthcare system, emphasis on cost-effectiveness and use of new sophisticated equipment create challenges to nurses caring for the critically ill patient with implications to job satisfaction. The Hawaii State Center for Nursing (HSCN) survey of 2007 by LeVasseur (2008) indicates 61% of the state's nursing workforce will most likely retire by 2020 causing a shortage of 2,620 nurses and raising the nurse demand by 28%. Retaining present nurses should be a goal for healthcare organizations. Recent issues in retention of nurses (American Nurses Association [ANA], 2008; Cary, 2008; Halfer, 2007) along with an associated nurse shortage (Evans, 2007; LeVasseur) have implications for the role of leadership in increasing nurse job satisfaction.

Dissatisfaction and shortage of critical care nurses impact patient care (Braithwaite, 2008; Ruggiero, 2005), nurse retention (Cary, 2008) and cost effectiveness (Ruggiero). Critical care nurses also function under an increased level of stress (Davies, 2008). The present research study quantified the level of job satisfaction of critical care nurses in Hawaii and determined the relationship of nurse socio-demographics with the subscales of job satisfaction from the Mueller and McCloskey (1990) Satisfaction Scale (MMSS). Results have leadership implications for healthcare organizations, patient care, and nursing education.

Background of the Problem

Critical Care Nursing Shortage

Critical care nurses work mainly in the hospital settings. Reports of 59% of available RN jobs in hospitals (U.S. DOL) have implications for critical care nurses. The latest report by the U.S. DOL published on March 6, 2009 indicated an increase of 27,000 jobs within the healthcare field; according to the AACN (2009b) nurses will fill the majority of such job opportunities.

To counteract the demand of nurses the present supply of new nurses is inadequate. Almost 50% of applicants were declined admission to nursing school due to nurse faculty shortage (AACN, 2009a). For the state of Hawaii the demand and supply imbalance will worsen. The supply of Hawaii RNs will increase by only 8.9% compared to the estimated 28% rise in demand by the year 2020 (LeVasseur, 2008). While 61% of the RN workforce in Hawaii will retire by the year 2020 (LeVasseur) the aging population is predicted to rise in the next 15 years at a pace double to that of the other parts of the U.S. (HSCN, 2008).

The shortage of nurses in critical care is unsafe for patient care, expensive for the healthcare organization (Ruggiero, 2005) and increases stress levels (Davies, 2008). By 2015, there will be a need for 114,000 more critical care nurses in the U.S. resulting from nurses leaving the critical care setting to work elsewhere (Mealer, Shelton, Berg, & Rothbaum, 2007). Hawaii has taken steps to address the shortage of critical care nurses at a few hospitals by conducting biannual critical care courses for several new nurse graduates and inexperienced nurses at two major hospitals, as reported by former nurse manager A. Miho-Johnson (personal communication, October 26, 2008). A process of

frequent hiring, recruitment and training of new nurses does not work in the best interests of cost-effectiveness for any healthcare organizations.

Demand for Critical Care Nurses

Existing high demand for nurses throughout the U.S. is expected to increase within 20 years due to the aging baby boomers. Above five million patients are admitted each year into critical care units with numbers increasing from higher life expectancy of people (Carr, 2009). With a higher population of aging patients in the intensive care setting the demand for critical care nurses is greater. To maintain critical care nurses in their present positions in Hawaii, a state known to depend on travel and contracted nurses for specialty areas (HSCN, 2008), is a necessity. The demand for critical care nurses is higher because they require special training.

Critical care nurses work in a highly technological and stressful environment (Egan, 2006). Extensive training to work in specialized units like the intensive care units and the emergency department is required. Nurses in critical care cannot be replaced without experience or critical care training in advanced skills (Robinson, 2001). Efforts directed by administration to support nurses' contributions to the critical care unit work in the best interests of the organization in promoting retention and reducing the demand. A report published by the American Association of Critical Care Nurses (2008a) indicated a rise in the requests for critical care nurses in the entire U.S. resulting from greater needs of the sick in the adult intensive care unit (ICU) and the emergency room (ER).

Nurse Job Satisfaction

Job satisfaction of nurses has an impact on retention. Full-time and part-time nurses will continue in their present positions depending on their job satisfaction (Cary, 2008). Transformational leadership style has been known to have a positive impact on nurse job satisfaction, retention and on patient care (Casida & Pinto-Zipp, 2008). Issues in job satisfaction, along with the current nurse shortage, create challenges to the delivery and leadership in safe healthcare.

In the year 2000, 30% of nurses were dissatisfied with their jobs and hospital nurses had the lowest satisfaction (Bureau of Health Professionals [BHP], 2000). Dissatisfaction negatively impacts stress. Stress levels for critical care nurses increase with dissatisfaction (Ruggiero, 2005) and nurse shortages further elevate stress (Davies, 2008). Global studies on job satisfaction (Lueng et al., 2007) indicate leadership implications for healthcare organizations, administrations and nurse leaders. This study provides valuable information to promote commitment among nurses in Hawaii. The results could apply to other states in the U.S.

Nurse Retention

Extra retention efforts must be directed towards new nurses and experienced critical care nurses. According to past studies, worsening retention issues create challenges on shortage (ANA, 2008; Cary, 2008; Halfer, 2007). Retaining nurses can reduce the shortage of nurses (Leurer, Donnelly, & Domm, 2007). In July of 2008, the ANA encouraged efforts in retention of new nurses because increasing evidence of several new graduates leave the nursing profession within the first year is rising.

Hawaii remains at a risk of nurses leave their present workplace. The intention of Hawaii RNs to leave their healthcare organization within the next 12 months was found to be most likely for 7.5% of RNs and somewhat likely for 10.8% RNs (LeVasseur, 2008). Hawaii being an island distant from the other states of the U.S., retention of nurses in Hawaii becomes highly essential. Satisfied nurses will less likely leave the islands.

Critical Care Work Settings

The work setting of critical care nursing can be overwhelming with high demand for highly efficient collaborative care. The burn out experienced by nurses in the ICU (Davies, 2008) can be emotionally and psychologically draining which has negative effects on patient care (Braithwaite, 2008). The work environment is known to create a major impact on nurse retention (Leurer et al., 2007); resulting in need for priority strategies in addressing issues of work environment. Professionally rewarding current positions, salaries, work hours, and safety in the work environment influenced the job satisfaction of nurses (BHP, 2000), while poor autonomy created dissatisfaction (Zurmehly, 2008).

Organizations can promote positive work settings to reduce stress levels and job dissatisfaction for critical care nurses; with a resulting benefit to patient care outcomes. The formation of healthy work environments is influenced by the outcomes produced by a given organization (Codier, Kooker, & Shoultz, 2008). Caring for patients in a highly diverse culture could have influences on the job satisfaction of critical care nurses in Hawaii.

Statement of the Problem

There is agreement among policy and decision makers that a general problem exists in regard to the relationship between job satisfaction and attrition of nurses (Buerhaus, 2008b; Rountree & Porter, 2009). The problem of poor nurse satisfaction and consequent retention issues, impacts nurse shortage. By the year 2025, the U.S. will have a shortage of 500,000 nurses (Buerhaus, Potter, Staiger, & Auerbach, 2008) and 37% of the hospital nursing workforce includes critical care nurses (American Association of Critical Care Nurses, 2008a).

The specific problem is the current nurse shortage (AACN, 2008; Lin et al., 2008; Mealer et al., 2007) and issues in nurse retention (Cram, 2007; Lin et al.; McGuire & Kennerly, 2006; Poter-Wenzlaff & Froman, 2008) especially in critical care units in Hawaii (LeVasseur , 2008) and nationally (Braithwaite, 2008; Ruggiero, 2005). Dissatisfaction among nurses in Hawaii and poor retention could worsen the anticipated nurse shortage in Hawaii. Almost 61% of Hawaii's nursing workforce will most likely retire by 2020 causing a shortage of 2,620 nurses by 2020 and raising the nurse demand by 28% (LeVasseur). The shortage and retention crisis ultimately undermine patient care quality (Braithwaite; Garrett, 2008; Leurer et al., 2007) and pose a possible threat of poor access to specialized healthcare.

This study represented a quantitative method with a correlational research design. This quantitative method study with a correlational design quantified the level of job satisfaction and explained the relationship between the 10 nurse socio-demographics and the MMSS job satisfaction scales for nurses currently working in critical care settings, by surveying a purposive sample of a minimum of 117 part-time or full-time practicing

Hawaii critical care nurses, at three major medical centers on the island of Oahu in Hawaii. This study provided nursing leadership implications for nurse educators, preceptors, administrators, and managers specifically for the state of Hawaii.

Purpose of this Study

The purpose of this quantitative study with a correlational research design was to quantify the level of job satisfaction and explain the relationship, that may or may not have existed between the 10 socio-demographics variables and the eight MMSS job satisfaction subscales among part-time and full-time nurses, currently working in the critical care settings of the emergency room or intensive care unit employed on the island of Oahu, Hawaii. The independent variables for this study were the 10 nurse socio-demographic variables to include: marital status, shift worked, average hours worked per week, level of education, years of experience in critical care nursing and in current hospital, hours of work, cultural group, salary and household income. The dependent variables were the eight subscales of the MMSS measuring the critical care nurse's level of job satisfaction to include: "extrinsic rewards, scheduling, balance of family and work, coworkers, interaction opportunities, professional opportunities, praise and recognition, and work control and responsibility" (Tourangeau, et al., 2006, p. 129).

This study used the MMSS tool to gather information from a purposive sample of 117 currently practicing critical care registered nurses in Hawaii. This study was conducted over two months at three major medical centers in Hawaii in order to correlate the influence of socio-demographics to the job satisfaction scales of the MMSS tool among critical care nurses in Hawaii, using the data provided from the inquiry.

Significance of the Problem

Significance of this Study

While various studies exist on job satisfaction of nurses in different states of the U.S., no current studies were found in the databases reviewed for the current study on job satisfaction in relation to socio-demographics of nurses working in critical care settings specific to the state of Hawaii. A study of critical care nurses benefits healthcare organizations and has an influence on nursing education in Hawaii. Lovitts (2005) explained the importance of research being original and producing effective results.

The anticipated nurse shortage and aging issues added significance to this study. Hawaii a geographically distant state has the most ethnically diverse population compared to any other state in the U.S. (HSCN, 2008). In the next 15 years Hawaii's aging population will multiply at twice the pace of other parts of the U.S. with a prediction that one out of every four individuals will be above age 60 (HSCN). Aging is also associated with illness and higher healthcare needs especially in the critical care setting, eventually raising the demands on the Hawaii critical care RN.

The relevance to this research was indicated in the continuity to studies conducted on job satisfaction of nurses. The results of the current study may help retain nurses in Hawaii meeting the high existing demand for critical care nurses. The impact of nurse shortage was seen on the healthcare delivery system in all states (Lin et al., 2008) and losing experienced nurses causes a financial burden to the health organization and affects patient care (Leurer et al., 2007), study results may benefit other states in the U.S. Correlations of critical care nurse socio-demographics to eight important scales of nurse job satisfaction obtained from the MMSS tool are also be valuable to other healthcare organizations, both nationally and globally because Chen, Hwang and Liu (2009) indicate

the rise in ethnically and culturally different nurses in the U.S. This study results add some knowledge about the influence of the sociological aspects of nursing, the organization culture and leadership to literature on job satisfaction specific to critical care in Hawaii.

Significance of this Study to Leadership

Results of this study added to the present body of knowledge on critical care nurse job satisfaction and nursing leadership by providing correlations of socio-demographics with scales of nurse job satisfaction from the MMSS instrument that are unique for the state of Hawaii. The information obtained contributed to the knowledge and understanding of present nurse leaders in Hawaii and future leaders in developing effective strategies for improving job satisfaction and promoting retention of employees in an ethnically diverse population. The HSCN (2008) conducted a survey identifying specific demographic differences among nurses in Hawaii.

According to the HSCN, of the 88% of working RNs, 62% of nurses in Hawaii work in hospital settings, 73% work in Honolulu and the average age of an RN is 44.35. Hawaii RNs unique racial/ethnic demographics include: "19% Filipino, 11% Japanese, 11% mixed with two or more races, 4% native Hawaiian, 4% Chinese, 2% Hispanic, 1% other Asian" (HSCN, p. 3). Korean, Samoan and Pacific Islanders were reported to be around 1% and Caucasians make up 41% (HSCN). Nursing care in Hawaii involves a demographic diversity among clients as well. Hawaii has demands of a rising population and an increasing aging population compared to other states in the U.S. (HSCN).

The information obtained from the current study is valuable to nurse leaders involved in recruitment of new critical care nurses. The results provide information to

educational leaders in developing strategies in promoting job satisfaction of new nurses, influencing nurse commitment and promoting patient safety within the critical care units. Leaders working towards improving nurse job satisfaction can enhance nurse job performance which may in return improve quality of patient care and cost effectiveness for the organization.

Nature of this Study

Overview of the Research Method

A research design chosen must address the problem, research questions and meet the purpose of the study being conducted. The research design for the current quantitative study was a correlational design that met the purpose of this study. The current research study aimed to determine if specific critical care nurse socio-demographics variables in Hawaii have any relationship to the dependent variable of job satisfaction subscales. To research specific factors that have an impact on job satisfaction and understand the most influential predictors that determine such an outcome, quantitative methods are appropriate (Creswell, 2005).

This study aimed to find the level of job satisfaction and explain correlations to work settings and nurse demographics, that may or may not have existed and a correlational study was effective. In correlational research, the degree of relationships between one or more variables for a given sample is studied (Creswell, 2005). A quantitative correlational design allowed for establishing relationships without manipulation of the dependent or independent variables. The degree of relationship that existed between job satisfaction scales and specific socio-demographics among nurses was used to predict one variable from the other, often referred as predictive correlational

studies (Creswell). In addition, correlation research assists in describing a given phenomenon and finding correlations (Cook & Cook, 2008).

Quantitative studies are characterized by statistical testing of hypotheses (Creswell, 2005) which were included in the current study. The eight hypotheses used in this study pertained to possible relationships between job satisfaction subscales and socio-demographics. This design was chosen over others because this method has been used in past nursing research on job satisfaction both nationally (Letvak & Buck, 2008; Schmalenberg & Kramer, 2008; Walker, 2008; Zangaro & Johatgen, 2009) and globally ((Xu et al., 2008; Misener et al., 1996).

A quantitative study provides numerical information data and is suitable for the current study in analyzing data collected from the 5-point Likert-type scale of the MMSS tool. The questionnaire used in this study provided a measure of job satisfaction for critical care nurses in Hawaii using a validated tool (Mueller & McCloskey, 1990). A survey was conducted for this study. Surveys are included among other instruments used in correlational studies (Sarin, 2009).

Overview of the Design Appropriateness

The research design was useful in identifying correlations between the socio-demographic variables and six of the eight subscales of job satisfaction among critical care nurses. The positive correlations identified in this study provide leadership implications to promote nurse retention and patient safety in the Hawaii healthcare system. The design did not provide a cause and effect relationship; rather it explained what the relationship was between the variables.

Correlations of job satisfaction to retention and stress were reported in past studies (Leurer et al., 2007; Ruggiero, 2005; William, 2003). A similar study was also done in Hong Kong (Leung, et al. 2007). The current study was done in a new geographic location.

The McCloskey and Mueller Satisfaction Scale (MMSS) developed in the year 1990, has been widely used in nursing research (Torangeau, McGillis, Doran, & Petch, 2006). The MMSS survey tool with a 5-point Likert-type scale has enabled researchers to understand factors of job satisfaction among nurses. The items of the MMSS tool are presented in a 5-point Likert-type scale with range of 1 (*very dissatisfied*) to 5 (*very satisfied*).

According to Likert, Roslow and Murphy (1993), social attitudes towards a given idea or act can be favorable or unfavorable. In a 5-point Likert-type scale, highly satisfied attitudes have a higher score of 5 and the highly dissatisfied scores have a score of 1 (Likert, et at, 1993). The scores of value 2, 3 and 4 on the Likert-type scale provide different response options. The undecided attitude receives a score of 3 and the intermediate choices are given a value of 2 and 4. The MMSS tool presents scoring in a 5-point Likert-type scale. The 31 items of the scale were then aggregated into interval-level subscales based on the Mueller and McCloskey's (1990) scoring procedures.

A survey provides descriptive data (Cook & Cook, 2008). The survey included in the MMSS tool was developed to find and understand the level of job satisfaction among nurses (Mueller & McCloskey, 1990). The quantitative research method chosen helped to accomplish the purpose of the present research study in Hawaii by determining the correlations between the variables.

A correlational research design using the MMSS tool has helped to understand the variables of the current study across cultures with variations in results. While studies in the U.S (Altier & Krsek, 2006) have used the MMSS tool, the Arabic version of the tool has been used with Palestine nurses by Misener, Haddock, Gleaton, Abu, and Abdul (1996). In studies done across cultures on Arabic nurses, Misener et al (1996) indicated the successful use of the MMSS tool, but also indicated rewards and benefits to have no relevance to job satisfaction**.** Based on cross-cultural findings, results varied for the state of Hawaii.

The success of the current research design on job satisfaction was noted in other global studies. Successful use of the MMSS model was seen overseas in Hong Kong in a study by Leung et al. (2007) on the job satisfaction of psychiatric nurses in relation to socio-demographics, work settings, and stress. The effective use of the MMSS tool benefited the current replicated study on job satisfaction in a different geographic location like Hawaii because it provided data on variables of socio- demographics and job satisfaction scales that are unique for a state with the highest ethnic diversity in the U.S.

The purpose of the present quantitative study with a correlational design was to examine and gather evidence for the rejection or support of the null hypotheses. Besides comparative information among groups, quantitative correlation research provides insight and information on issues (Cook & Cook, 2008). The current study was conducted at three major medical centers that cover the East and West of the island of Oahu in Hawaii and used a purposive sample of a total of 117 critical care nurses. The research site and participants were carefully chosen with common characteristics to promote generalization

of the results for the population of critical care nurses. Legal, ethical, social, economic, physical, and psychological risks, were assessed in relation to this study and no risks were identified.

Research Questions

The research questions reflected on the purpose of this study to quantify the level of job satisfaction and explain the relationship that may or may not have existed between the 10 socio-demographics variables and the eight MMSS job satisfaction subscales among critical care nurses in Hawaii. Two research questions directed the current quantitative study with a correlational design. The first research question aimed to quantify the level of job satisfaction of critical care nurses in Hawaii.

The second research question aimed to explain the relationships that may or may not have existed between the 10 socio-demographics variables and the eight MMSS job satisfaction subscales among nurses currently working in the critical care setting in Hawaii. The research questions for the current research were designed as follows:

1. What is the level of job satisfaction among critical care nurses in Hawaii?

2. What, if any, are the relationships of the 10 socio-demographics variables with the eight MMSS job satisfaction subscales for nurses currently working within critical care settings in Hawaii?

Hypotheses

Null and research hypotheses have been developed using variables of job satisfaction scales from the MMSS instrument and the socio-demographics. The independent variables included those from the demographic profile (see Appendix A): marital status, shift worked, average hours worked per week, level of education, years of

experience in critical care nursing and in current hospital, hours of work, cultural group, salary and household income. The dependent variables were the subscales of job satisfaction from the MMSS tool (see Appendix B) to include: "extrinsic rewards, scheduling, balance of family and work, coworkers, interaction opportunities, professional opportunities, praise and recognition, and work control and responsibility" (Tourangeau, et al., 2006, p. 129). Eight hypotheses for the current study were derived from the second research question of this study. The hypothesis explains relationships between the independent and dependent variables and was derived from the research question of this study (Cone & Foster, 2006).

A null hypothesis explains the absence of a phenomenon or relationship. A research hypothesis asserts the presence of a relationship or a phenomenon. A hypothesis includes a statement that explains the expected outcomes of the research as predicted (Creswell, 2005). The research questions and hypothesis reflected on the purpose of the research study.

Each null hypothesis in the current study is listed first followed by the research hypotheses. The null hypotheses address the absence of relationships between the variables of socio-demographics and job satisfaction scales from the MMSS instrument. The following null and research hypotheses addressed the second research question.

$H1_{o:}$ The linear combination of the 10 socio-demographic variables will not predict the extrinsic rewards subscale score for nurses currently working within critical care settings in Hawaii.

$H1_A$: The linear combination of the 10 socio-demographic variables will predict the extrinsic rewards subscale score for nurses currently working within critical care settings in Hawaii.

$H2_O$: The linear combination of the 10 socio-demographic variables will not predict the scheduling subscale score for nurses currently working within critical care settings in Hawaii.

$H2_A$: The linear combination of the 10 socio-demographic variables will predict the scheduling subscale score for nurses currently working within critical care settings in Hawaii.

$H3_O$: The linear combination of the 10 socio-demographic variables will not predict the balance of family and work subscale score for nurses currently working within critical care settings in Hawaii.

$H3_A$: The linear combination of the 10 socio-demographic variables will predict the balance of family and work subscale score for nurses currently working within critical care settings in Hawaii.

$H4_O$: The linear combination of the 10 socio-demographic variables will not predict the coworkers subscale score for nurses currently working within critical care settings in Hawaii.

$H4_A$: The linear combination of the 10 socio-demographic variables will predict the coworkers subscale score for nurses currently working within critical care settings in Hawaii.

$H5_O$: The linear combination of the 10 socio-demographic variables will not predict the interaction opportunities subscale score for nurses currently working within critical care settings in Hawaii.

$H5_A$: The linear combination of the 10 socio-demographic variables will predict the interaction opportunities subscale score for nurses currently working within critical care settings in Hawaii.

$H6_O$: The linear combination of the 10 socio-demographic variables will not predict the professional opportunities subscale score for nurses currently working within critical care settings in Hawaii.

$H6_A$: The linear combination of the 10 socio-demographic variables will predict the professional opportunities subscale score for nurses currently working within critical care settings in Hawaii.

$H7_O$: The linear combination of the 10 socio-demographic variables will not predict the praise and recognition subscale score for nurses currently working within critical care settings in Hawaii.

$H7_A$: The linear combination of the 10 socio-demographic variables will predict the praise and recognition subscale score for nurses currently working within critical care settings in Hawaii.

$H8_O$: The linear combination of the 10 socio-demographic variables will not predict the work control and responsibility subscale score for nurses currently working within critical care settings in Hawaii.

$H8_A$: The linear combination of the 10 socio-demographic variables will predict the work control and responsibility subscale score for nurses currently working within critical care settings in Hawaii.

Theoretical Framework

The current study used the framework of motivation in relation to the job satisfaction of critical care nurses with the intention of promoting retention. Basing research on well established theory is important for quantitative studies (Creswell, 2005). If variables do not have a sound theoretical framework the research study can become questionable. Motivating and creating a sense of trust among employees promote job satisfaction and retention (Mihajlovic, Zivkovi, Pvulovic, Strbac, & Zivkovic, 2008). Theoretical explanations serve as a system that connects, organizes, and condenses ideas to create knowledge.

The theoretical frameworks of Maslow (1954) and Herzberg (1966) have suggested motivation as a key factor in job satisfaction with emphasis on social, safety and psychological rewards. The eight subscales the MMSS tool for this study are distributed into categories of social, safety and psychological awards. A selected established framework aims to support the rationale for this study (Polit & Beck, 2008). Work motivation increases with fulfillment of basic needs.

Maslow (1954) posited a pyramid of basic and growth needs to improve motivation. The first four basic needs are physiological, safety, belongingness and esteem (Maslow). Once a particular need is met, a person moves up to fulfilling the next need (Sarin, 2009). The next four growth needs are cognitive, aesthetic, self actualization, and transcendence (Maslow). Maslow's theoretical framework works on the premise that

humans can reach a level of self actualization only on ensuring basic needs are met. Interestingly, a state of self actualization does not stop a person from being motivated; rather a sense of courage and risk taking comes into play (O'Connor & Yballe, 2007).

Nurses who have reached a state of self actualization continue to remain committed and may feel purposeful in their duties in critical care, resulting in promoting retention. Motivation directs individuals in making decisions on taking certain actions (Sarin, 2009, Harvath, 2008). Meeting the needs of nurses addresses motivation to work and can increase job satisfaction. Mueller and McCloskey (1990) have indicated job satisfaction to be an important factor in achieving self actualization, the highest level in the hierarchy of needs described by Maslow (1954). Varying socio-demographics of marital status, level of education, years of experience, cultural differences, area of work, and household income, affected motivation to work in critical care resulting in an impact on job satisfaction.

Maslow emphasized hierarchy of needs whereas Herzberg (1966) classified needs under two categories. The two main categories identified by Herzberg on job satisfaction include motivators (belongingness, esteem, and self actualization) and hygiene needs (physiological and safety needs). Motivators and hygiene factors when applied to the hospital setting tend to create as sense of satisfaction for critical care nurses based on specific demographics.

Herzberg's (1966) dual factor framework of hygiene and motivation, called Motivator-Hygiene theory, emphasized psychological growth required for optimum job satisfaction. Motivating aspects of work in relation to recognition, freedom, and responsibility further influence job satisfaction (Herzberg). Autonomy, empowerment,

and appreciation for work done can increase job satisfaction for critical care nurses. Satisfaction may promote retention of nurses in Hawaii.

Maintenance/Hygiene in the context of work settings including; pay, relationships, policies, and supervision, is one of the key aspects for job satisfaction (Herzberg, 1966). The motivational aspect of psychological growth in a given responsibility or task such as critical care nursing can be extremely challenging with issues of safety and psychological stress. Herzberg's conceptual framework suits this study because work related factors such as scheduling, flexibility of work hours, area of work, and shift worked, had an influence on the motivation of nurses in Hawaii resulting in job satisfaction. The purpose of the current study was to examine the relationship of work and demographic factors on job satisfaction of nurses in Hawaii living in the most ethnically diverse state in the U.S.

Herzberg (1966) indicated job factors influenced by management authorities were required to keep employees motivated. The motivational hygiene theory implies the importance of providing hygiene factors to avoid job dissatisfaction among nurses. Satisfaction in one's job is attained on meeting specific needs. Herzberg identified physiological and psychological factors as basic human needs. The physiological are fulfilled by salary or income for food and shelter, whereas the psychological needs are fulfilled by management efforts that enable employees to grow (Herzberg). Dissatisfied nurses resulting from poor leadership cause commitment issues.

The positive influence of nurse satisfaction on retention (Cary, 2008) along with an impact on patient care (Ruggiero, 2005; Braithwaite, 2008) has been proven through empirical studies. The theoretical basis for the current study was that if nurses in Hawaii

are motivated to work, they will remain satisfied and committed to their jobs in Hawaii, resulting in reduced nurse shortage and effective patient care. Providing monetary benefits and meeting the physical and psychological needs promotes job satisfaction. Nevertheless, the public does not recognize monetary benefits for nurses as influencing the care provided by nurses (Baer, 2009). While nurses work on providing efficient care, lack of personal growth and unmet physiological needs could affect their commitment to the critical care setting.

The relationship between the variables of socio-demographics to job satisfaction scales among critical care nurses may impact nurse retention and as a result worsen Hawaii nurse shortage. Herzberg (1966) pointed out areas of organizational policies, relationships with administration and salaries to be factors of job dissatisfaction. Leadership in nursing may benefit from an awareness of such factors to create effective strategies in promoting retention. The description of the relationship between the variables in a research problem forms the basis of the theoretical framework (Macnee & McCabe, 2008). The framework of motivation as it impacts Hawaii critical care nurse's job satisfaction level was suitable for the study.

Hawaii has the largest ethnically diverse population in the U.S. (HSCN, 2008) and is geographically distant from other population of the U.S. The theoretical framework for the current replicated study was based on the assumption that results of job satisfaction may be different for the state of Hawaii based on differences in population. The subscales of job satisfaction that reflect on aspects of work settings and the specific socio-demographics of nurses in Hawaii may be a factor of motivation resulting in

satisfaction or dissatisfaction. The results of the current study provide direction in strategic planning for retention of nurses in Hawaii.

The motivational theory directed the current study on job satisfaction. The selected framework, whether established or created, aimed to support the rationale for this study (Polit & Beck, 2008). Finding the level of job satisfaction in stressful critical care work settings is beneficial to leadership. Highly stressful environments in critical care can result in poor motivation (Davies, 2008) leading to dissatisfaction. Communication issues and effective leadership affect motivation and the job satisfaction of nurses (Rudman & Gumbita, 1995). Dissatisfied nurses may react in a way that may cost the organization.

One reaction among critical care nurses could include calling in sick frequently. Taking time off too often from work, according to Herzberg (1966), is related to job dissatisfaction. The current research fits in with other research completed in which motivation is described and established to impact job satisfaction. The emphasis on motivation to improve job satisfaction for nurses has been used effectively in several past studies (Cram, 2007; Davies, Spence-Laschinger, & Andrusyszyn, 2006; Lueng et al., 2007; Rudman & Gumbita, 1995). Specific needs of safety, self actualization and self esteem are characterized as motivators to improve job satisfaction.

Motivation with respect to income, work hours, and salary was shown to affect nurse's job satisfaction as early as the 1940s (Nahm, 1940), well before critical care nursing was initiated in the 1960s (Morton, Fontaine, Hudak & Gallo, 2005). Then and in the years since, work conditions have affected motivation to work and became a major

factor in the rising shortage of critical care nurses. Lewis (2007) indicated work related factors to affect the shortage of nurses in the 1970s.

The current research fits in with previous research on nurse shortage, commitment, leadership, stress, organizational behavior, work settings, and specific nurse socio-demographics, shown to influence job satisfaction based on motivation (Codier et al., 2008; Lueng et al., 2007). The current study is unique because this study was conducted in a new geographic location. The groups of nurses being studied vary in cultural backgrounds (HSCN, 2008). A different setting may provide different levels of job satisfaction and may identify different areas of importance to satisfaction in comparison to past studies in other states and countries. The information unique to Hawaii may be valuable to healthcare organizations and nursing education in Hawaii.

Definition of Terms

The definitions provide clarification of the independent and dependent variable and several other concepts discussed in this study. Definitions have been provided specifically to clarify concepts and terms used in nursing. The main variables of socio-demographics and satisfaction scales among nurses have been defined in terms of the purpose of the current study.

Critical care "is the direct delivery of medical care to a critically ill or injured patient" (U.S. Department of Health and Human Services [DHHS], 2001)

Critically ill patients according to the American Association of Critical Care Nurses (2008a) "are defined as those patients who are at high risk for actual or potential life-threatening health problems. The more critically ill the patient is, the more likely he

or she is to be highly vulnerable, unstable and complex, thereby requiring intense and vigilant nursing care" (p. 1).

Critical care unit includes a specific workplace within a hospital involving the care of very sick patients using specially trained nurses to conduct frequent observations, immediate interventions and the use of highly technological monitoring equipment. According to Carr (2009), "surgical or medical intensive care units, "shock-trauma" and "step-down" units, and burn and neurosurgical ICUs" (p. 121) are considered critical care units. Carr also adds ER to the list. For the current study, the ER, cardiac care unit, general ICU, medical ICU, surgical ICU and the neuro-trauma ICU in Hawaii are included. "Examples of specialized critical care units are cardiovascular, surgical, neurological, trauma, transplantation, burn, pediatric, and neonatal units" (Sole, Klein & Mosley, 2009, p. 3)

Critical care nursing as defined by the American Association of Critical Care Nurses (2008a, p.1), "is that specialty within nursing that deals specifically with human responses to life-threatening problems." The problems on patients include "trauma, major surgery, or complications of illness" (Sole, et al., 2009, p. 3). Sole et al. indicated, "The human response can be a physiological or psychological phenomenon" (p. 3). As per Freysteinson (2009), "Critical care nurses are educated in working with fragile critically ill patients" (p. 89).

A Hawaii critical care registered nurse is a licensed person who is part of the Hawaii healthcare team that provides care for the healthy and the sick individual in a variety of settings. A critical care registered nurse undergoes specialized training to care for extremely sick patients using close observations in a closely monitored environment.

"A critical care nurse is a licensed professional nurse who is responsible for ensuring that acutely and critically ill patients and their families receive optimal care" informs the American Association of Critical Care Nurses (2008a).

Job satisfaction in the current study refers to nurses who are content with working in their present position in the critical care unit at a given healthcare organization. According to Price (1972), satisfaction is an extent "to which members of a social system have a positive affective orientation toward membership in that system" (p. 156). Nursing job satisfactions can me maintained by "positive affective orientation" (Price, 156).

Nurse socio-demographics for the current study are defined by specific characteristics among critical care nurses who could impact job satisfaction: marital status, average hours worked per week, highest level of education, years of experience in critical care nursing, years of experience in current hospital, cultural group, and household income. Socio-demographics of nurses provide unique characteristics of nurses (Wild, Parsons, & Dietz 2006).

Retention of nurses addresses the commitment of nurses to continue in their present healthcare organization. According to Sole et al. (2009), "Issues related to retention in the work place" (p. 8) affect the shortage in critical care nursing.

A critical care work setting for the current study includes intensive care units and the emergency department in a hospital. According to Sole et al. (2009), "critical care nurses practice in varied settings to manage and coordinate care for patients who require in depth assessment, high –intensity therapies and interventions, and continuous vigilance" (p. 3).

Subscales of job satisfaction include the eight subscales as identified on the MMSS instrument to include: "extrinsic rewards, scheduling, balance of family and work, coworkers, interaction opportunities, professional opportunities, praise and recognition, and work control and responsibility" (Tourangeau, et al., 2006, p. 129).

Healthy work settings according to Shirey (2008) *"*are supportive of the whole human being, are patient focused and are joyful work places" (p. 258).

Assumptions

This study made an assumption that the participants involved in this study would respond to the questionnaire honestly based on their individual experiences in critical care nursing. Participant anonymity was maintained to promote honest responses. Signatures were required from participants. Names were not connected to the completed surveys in order to encourage honest participation and reduce bias. Such an assumption was reasonable because a researcher cannot control bias.

The second assumption was that the questionnaire would be answered by the critical care nurses who represented the population under the current study. Every effort was made towards purposive sampling of critical care nurses who met the sample requirements of this study. For statistical significance, the study included the 10 independent variables of socio-demographics, the 8 dependent variables of job satisfaction scales from the MMSS tool, and a minimum of 114 responses.

The number 114 was based on the sampling model provided by Tabachnick and Fidell (2001). The formula used for the current study was "104 + *m"* (Tabachnick & Fidell, p. 117). The letter *m* represents the total number of independent variables which represents 10 for the current study. For this study on job satisfaction, the letter *m* had a

value of 10 because there were 10 independent variables of socio-demographics. The unit managers were contacted to assist in choosing the participants on the day of the study.

The third assumption for the current study was that the MMSS is a valid and reliable instrument. Mueller and McCloskey (1990) have reported construct and criterion-related validity of the MMSS**.** Past studies on job satisfaction have used the MMSS tool for nurses (Altier & Krsek, 2006, Leung, et al. 2007). Demands on critical care nurses may be higher in Hawaii with a multicultural population and Carlton, Ryan, Ali, and Kelsey (2007) indicate challenges faced by nurses in expectations to care for multicultural patients in the critical care settings within the hospital. This assumption was reasonable and unlikely caused damage to this study because replicated studies using the MMSS instrument, increases the reliability of the tool.

Scope of Study

The focus was on socio-demographic factors and job satisfaction scales from the MMSS tool among critical care nurses as either promoting or inhibiting job satisfaction. The current study was conducted in Hawaii. The population included practicing critical care nursing staff, working full-time or part-time at three medical centers in Hawaii within critical care units. This study engaged critical care nurses working in the emergency room and different specialized intensive care units.

Purposive sampling was done to ensure relevance of sample's experience with critical care and representation of the intended population. Approval was obtained from all three hospitals chosen for this study. The unit managers of the critical care units were contacted and letters of approval were obtained.

Limitations

There were mainly four limitations for this study. The results of the current quantitative correlational study may not be generalized because of the four limitations based on the choice of methods used. One of the limitations of this study was on the participants selected for this study who were currently practicing Hawaii critical care registered nurses and who met specific criteria described in the design.

The nurses included in this study were those taking care of adult patients in the ICU and did not include pediatric ICU nurses. The results of this study may not apply to pediatric ICU nurses. Attempts made to include pediatric ICU nurses were unsuccessful because of IRB rejection of the current research study by the specific healthcare organization. To reduce this limitation ER nurses were included because they normally have experiences with both adult and pediatric patients.

The second limitation was that this study was exclusively for the state of Hawaii. This approach to the study indicated that the responses may be specific to the socio-demographic group of nurses in Hawaii. Although a limitation, the main focus of the study was on Hawaii critical care nurses and the study addressed the purpose of the study by explaining relationships specific to the state of Hawaii.

To improve credibility and minimize the limitation, three different hospitals from the east and west of the island were used. In addition, different specialty ICU settings were used which are similar to the ones in other states of the U.S. Although the socio-demographics may vary, having a wide variety of hospitals and different critical care work settings may reduce the limitation because the work environment will have similarities to other states.

The third limitation of this study was that the method chosen for data collection required only voluntary participation of critical care nurse-participants, which prevented responses from non-participants for this study resulting in non-participation bias. This limitation was overcome by encouraging participation by giving adequate information of the study prior to data collection. For the comfort of the nurses a meal was also provided during data collection. Majority of the nurses participated in the study and non-participants were mainly those that were extremely busy with patient care.

The fourth limitation was based on the approach used to inform the participants of the purpose of the study. Under this premise the participants knew the purpose of this study and their responses may have been made under such influence. The responses of the survey participants varied based on individual experiences and no control over individual biases could be maintained. To reduce this limitation the nurses were not required to write their names and assurance of the anonymity of responses was re-enforced. Names were not connected to the completed surveys in order to encourage honest participation and reduce bias.

Delimitations

A few delimitations based on sample, setting, location, and variables have reduced the scope of this study. Delimitations have narrowed the scope of this study using a purposeful sample of critical care nurses, within the emergency room and intensive care unit setting for the state of Hawaii. The hospital setting being exclusively included for the current study, results cannot be generalized to those nurses working in other settings. The results may also not be generalized to other units of the hospital besides critical care.

Focusing the study in Hawaii among critical care nurses, and excluding nurse managers, educators, administrators, supervisors, nurse aides, licensed practical nurses, and ward clerks, results cannot be generalized to all nurses working in other areas of the healthcare system. The study was limited to critical care nurses in Hawaii and results may not apply to non-registered nurses, pediatric ICU or CCU nurses, licensed practical nurses, or healthcare personnel in a healthcare organization. Suggestions by authors made in a given study for registered nurses may not be generalized for other personnel in healthcare (Ingerson, Witzel & Smith, 2005).

The focus of this study remained on Hawaii socio-demographics that either improve or inhibit personal job satisfaction. Hawaii's population is diverse and unique compared to the other states in the U.S. which affects generalization to other states in the U.S. In addition, another aspect that delimits this study is based on use of limited variables. Using only 10 socio-demographics and eight satisfaction subscales, the results may not be generalized to all critical care nurses with different socio-demographics and subscales of job satisfaction.

Summary

The problem of nurse shortage locally in Hawaii and nationally (AACN, 2008; LeVasseur, 2008; Lin et al., 2008; Mealer et al., 2007), issues with nurse retention, and the increased nursing demand affects patient safety within the critical care setting (Braithwaite, 2008; Garrett, 2008). According to current literature, a rising nurse shortage exists in the U.S. and for the state of Hawaii. The rise in the demand for critical care nurses (American Association of Critical Care Nurses, 2008a; Carr, 2009; HSCN, 2008) with the additional expectation of highly efficient care in the critical care work setting

creates additional challenges to the nurse. Understanding factors of job satisfaction are imperatives in critical care nursing for new nurses and leaders in nursing because according to Chen, Hwang and Liu (2009), motivation, trust, and satisfaction have an influence on leadership. Nurses satisfied with their jobs remain in their jobs, resulting in higher retention and reduced shortage (Cram, 2007; Davies, Spence-Laschinger, & Andrusyszyn, 2006; Lueng et al., 2007; Rudman & Gumbita, 1995).

A quantitative study with a correlation design helped to establish correlations among the variables of 10 independent socio-demographic variables and 8 dependent variables of job satisfaction scales from the MMSS in the current study specific to critical care nurses in Hawaii. The results may serve as guides to leaders and educators in healthcare to promote critical care nurse retention, reduce nurse shortage and maintain effective patient care in Hawaii critical care units. Understanding critical care nurse socio-demographics and job satisfaction scales of the MMSS tool may have broadened implications to leaders in healthcare within the ethnically diverse state of Hawaii

The widely used MMSS tool (Tourangeau, et al., 2006) examined job satisfaction among Hawaii critical care nurses along with subscales of satisfaction which relate to critical care work settings. The theoretical framework of motivation based on Maslow (1954) and Herzberg (1966) provided guidance to this study to quantify the level of job satisfaction which in turn influences retention. The explanations of these frameworks are scientific and of high quality. Theoretical frameworks served as a guide to this study to link findings to a body of knowledge. A review of past literature relevant to the variables and theoretical framework of the current study support this study.

Several studies have been done to emphasize the influences on job satisfaction of nurses. Chapter 2 of this study begins with a historical review of critical care nursing, as it relates to nurse shortage, job satisfaction, work settings, and nurse socio-demographics. Recent literature on nurse shortage is provided with relevance to critical care nursing. A detailed review backed by supportive literature is presented on job satisfaction, work settings, and nurse socio-demographics of critical care nurses to highlight the relevance of the current study, both nationally and globally.

CHAPTER 2: REVIEW OF THE LITERATURE

Nurses have a huge impact on patient care outcomes at any healthcare organization and nurse job satisfaction has implications for productivity. Literature provides data of the rise in the shortage of nurses (ACCN, 2009a; Cram, 2007; Lin et al., 2008; Poter-Wenzlaff & Froman, 2008) and critical care nurse shortage is part of the growing national nurse shortage (American Association of Critical Care Nurses, 2008a). The present shortage of nurses in critical care nursing is related to aging nurses, short supply of nurse educators, and stress among this group of nurses. With regard to the nurse shortage and challenges for critical care nurses, emphasis on retention is essential.

Job satisfaction among nurses affects retention (Cary, 2008; Irvine & Evans, 1995;) and is an area of concern within critical care nursing because dissatisfied nurses are likely to leave the organization resulting in reduced number of experienced staff and worsening of nurse shortage. Work environment and safety impacts job satisfaction for nurses (Schmalenberg & Kramer, 2008). The critical care workplace must be conducive to safe nursing care of critically ill patients. Reflecting on a search through various online databases and libraries, the current chapter begins with a historical review of different influences to nurse job satisfaction followed by a literature review on: nurse shortage, job satisfaction, work settings, nurse socio-demographics, and influential factors of motivation in critical care nursing.

Title Searches, Articles, Research Documents, and Journals

The literature presents a historical view of job satisfaction as it relates to the initiation of critical care nursing along with aspects of job satisfaction, autonomy, motivation, work settings and leadership, stress and burn out, demographics and the nurse

shortage. The literature review further elaborates on recent information on nurse shortage, job satisfaction, work settings, and nurse socio-demographics. Leadership aspects and the theoretical framework of motivation, identify implications to current practice in critical care nursing. Searches were done using various databases online and from libraries.

A total of 186 references are included in the current study to address the theoretical framework, the variables, research design, and the historical overview. Databases for literature review included: (a) EBSCOhost (b) ProQuest (c) CINAHL (d) Info TracOne file, (e) American Healthline, (f) Ovid, and (g) UMI ProQuest Digital Dissertation database. A local library at a University in Hawaii was also used to explore existing research in Hawaii on job satisfaction of critical care nurses. Search terms used were: nurse job satisfaction, retention, motivation, nurse stress and burnout, critical care nursing, nurse shortage, nurse demographics, critical care nursing leadership, critical care education, and job dissatisfaction.

Historical Overview

Initiation of emergency care of patients dates back to early 1900, when first aid units were set up by Lillian Wald to help meet the health needs of immigrants (Buhler-Wilkerson, 2001). Considerations of the impact of work settings on patient care outcomes, was considered important. Nurse's work environment was first studied by Florence Nightingale in early 1900s to improve sanitation and work settings in prevention of diseases (Miracle, 2008). Improving the work environment was found to be crucial by Florence Nightingale, to prevent diseases (Miracle). The work environment in return influenced job satisfaction.

The earliest study on nurse job satisfaction was conducted by Nahm in 1940 (Parsons, 1998). Inadequate personal benefits and certain specific work settings created job dissatisfaction among nurses. Nahm concluded "work hours, attitudes about work, and relationships with managers, family/work balance, income, and advancement opportunities" (p. 1390) impacted on nurse's level of job satisfaction. The work conditions were further impacted by epidemics.

Rise in epidemics and associated health needs brought a new turn to the care of the critically ill. In late 1940, to 1950, the polio epidemic resulted in special respiratory care units, possibly initiating the role of critical care nurses (Fairman, 1992). Patients with critical care needs required individual care.

To promote special care of the critically ill, changes were made in delivery of nursing care. Nurses were hired as private nurses to care for very sick patients in the hospitals (Fairman, 1992). Determining the need for safe patient care specialized units became necessary.

Earlier studies were not specific to critical care nursing because the development of critical care units was not initiated until the 1950s when critically ill patients required more observations and care than patients with lower acuity levels (American Association of Critical Care Nurses, 2008b). The 1960s officially marked first critical care units (Morton et al., 2005), and the ideology and development of the critical care nurse's role resulted from the need for close supervised care of the critically ill patients (Robnett, 2006). Although germinal studies on job satisfaction of nurses were not specific to critical care nurse satisfaction, critical care nurses were impacted by nurse shortage.

The shortage of critical care nurses dates back to the 1960s (Lewis, 2007). As the overall shortage of nurses grew, fewer critical care nurses were available. Interest in educating nurses to work in the critical care environment became a priority for healthcare organizations in response to the rise in the demand.

The foundation of the American Association of Critical Care Nurses as a specialty organization for critical care nurses in 1969 (Morton et al., 2005), promoted nursing education in critical care. ICU and ER nurses were gradually considered specialty areas in critical care. Emergency care nursing became prominent in the 1970s and advanced education of nurses in this specialty emerged (Synder, Keeley & Razionale, 2006). The main cause of critical care nurse shortage in the 1970s was from issues of low income, rotational shifts without compensation and limited benefits (Lewis, 2007). Nurses required high motivation to work in an area that required complex care of patients.

Several factors affected the critical care nurse's motivation to work for the severely ill patients. Issues in job satisfaction did not result from nurse's interests in personal needs. In the 1980s nurses' wanted to be more active in patient care standards. The nurse autonomy in clinical practice had an impact on job satisfaction (Lashinger & Havens, 1996). Nurse autonomy in making suggestions or choices on patient care with emphasis on patient safety may improve patient outcomes.

Experiencing limited autonomy, nurses had a reduction in job satisfaction and a rise in stress levels. In the mid 1990s Irvine and Evans (1995) conducted a study on intensive care nurses and reported competence and expertise to have influenced satisfaction whereas stress created dissatisfaction among nurses. High stress level led to nurse retention issues and decreased satisfaction. In the year 1995, ANA took steps in

promoting the measurement of job satisfaction among nurses (Best & Thurston, 2004). Studies in nurse job satisfaction were encouraged to identify factors causing dissatisfaction.

Few studies directly related to critical care nursing were found in the databases reviewed. In the 1990s studies in leadership and work environment in relation to job satisfaction were done to reflect retention issues among nurses. Within the work settings, effective communication affected job satisfaction and productivity (Rudman & Gumbita, 1995). Poor communication within the work settings can create personal conflicts among workers.

Rudman and Gumbita (1995) found environmental factors created internal conflict and subsequent attention to them was found to be vital to job satisfaction and commitment among nurses. The influence of leadership to improve work settings in respect to communication among nurses became necessary for job satisfaction. Leadership values of trust and respect using open timely communication were reported to have a positive effect on productivity, the work environment and job satisfaction (Rudman & Gumbita). Values of good leadership had a positive influence on the psychological wellbeing of nurses. Psychological wellbeing is the premise on which Herzberg's (1966) theoretical framework of Motivational Hygiene is based.

Psychological growth is vital in stimulating motivation to work, with resulting influence on commitment. Specific needs of safety, self actualization and self esteem were characterized as motivators to improve job satisfaction (Herzberg, 1966). Positions, salaries, work hours and safety in the work environment,seen as professionally rewarding, influenced the job satisfaction of nurses (U.S. BHP, 2000). Evidently, the

social need to belong along with safety in work settings, and the psychological aspects of reward, recognition, autonomy and responsibility, formed the basis of job satisfaction in 2000; falling within the theoretical framework of motivation as described by Maslow (1954), and Herzberg. Motivated nurses were more likely to be committed.

In assessing job satisfaction, researchers considered various individual nurse socio-demographics in retention. According to a past study, the critical care area was mentally and physically less challenging for a young nurse while demographic data included an aging nurse workforce in critical care (Robinson, 2001). Shader, Broome, Broome, West, and Nash (2001) reported that nurse characteristics of age and work experience have a relation to job satisfaction.

In the late 1990s a study done of nurses revealed job satisfaction to have a positive impact on commitment towards the organization and to the nursing profession (De Groot, Burke & George, 1998). On a larger scale the perspective of autonomy and stress reflected on overall job satisfaction for nurses and influenced retention. Work settings and leadership together became areas necessary for job satisfaction among nurses. Efforts by healthcare organizations to increase the control of nurses on work settings in context and content were made in response to the acute U.S. nurse shortage and in an attempt to produce effective patient care (Laschinger & Havens, 1996). A reduction in nurse turnover depended highly on job satisfaction.

Additional research provides data on the influence of job satisfaction on new nurses. A national survey conducted by the journal *Health Affairs* in 2000 of a sample of 1.9 million registered nurses had evidence that 7.5% of male and 4.1% of female nurses had given up the nursing profession within four years of graduation, their decision related

to poor job satisfaction (American Health Line, 2002). The number of dissatisfied nurses began rising.

In the year 2000, 30% of nurses were found dissatisfied with their jobs and satisfaction was lowest among hospital nurses (U.S. BHP, 2000). And impact of the work environment was evident on job satisfaction. Professionally rewarding current positions, salaries, work hours, and safety in the work settings influenced the job satisfaction of nurses (U.S. BHP). The work environment together with issues in personal demographics was known to influence job satisfaction.

Satisfaction of nurses was impacted by personal issues of inadequate physical and emotional preparation to begin to work (Fletcher, 2001). Disappointment was expressed by nurses from poor staffing ratios, informed Fletcher. Nursing staff highly valued patient safety. Compromised safety in the work environment created dissatisfaction among nurses, added Fletcher. In response to the growing shortage and job dissatisfaction, the development of additional professional organizations began in the millennium.

By the year 2001, 51 organizations formed the Americans for Nursing Shortage Relief (ANSR), an alliance to address the nursing shortage (ANSR, 2006). Professional organizations in nursing became active in addressing work settings. In the year 2001, the American Association of Critical Care Nurses began working on creating healthy work environments in critical care units.

Following year 2002, the effect of the healthcare environment on nurse satisfaction became even more prominent in critical care nursing. The year 2003, marked the role of the American Association of Critical Care Nurses in promoting healthy work

environment and by 2005 national standards were developed (Ulrich et al., 2009). Improved work settings were a way of promoting retention.

Rewarding healthcare organizations for efforts in maintaining high standards in critical care work settings became necessary. The Beacon award for critical care excellence was developed by the American Association of Critical Care Nurses to show recognition for healthy work settings and quality patient care (Ulrich et al., 2007). Such efforts became necessary to promote quality patient care.

The nurse shortage also created challenges to the magnet status of healthcare organizations. The magnet status of a healthcare organization was maintained with high emphasis given to job satisfaction of nurses (Robinson, 2001). The nurse shortage impacted retention of present nurses in their current work settings. The rising shortage impacted the magnet status of healthcare organizations in respect to leadership involved, work environment, and job satisfaction, as these were important factors in preventing nurses from leaving (Robinson). On a larger scale, the critical care shortage continued to grow.

A survey conducted by the U.S. BHP (2004) predicted the shortage of critical care nurses would reach 29% by 2020 and 56.2% of total RNs were reported to be working in hospital settings. Since year 2000, the percentage of RNs in hospital settings has decreased from 59.1% to 56.2% and these numbers continue to provide information on the higher numbers of RNs in hospital settings (U.S. BHP). Nurses were found to be in greater demand within hospitals and additionally the critical care nurses were aging. As the nurse shortage worsened within the U.S., it was imperative that steps be taken in

promoting retention of nurses by addressing job satisfaction. Measures to curtail the nurse shortage in critical care created further dissatisfaction among nurses.

Steps taken by hospitals did not work in the best interests of nurses. The nursing shortage led to mandatory overtime, extending up to 16 hours with a limited notice of as little as just one hour (American Association of Critical Care Nurses, 2003). A sense of dissatisfaction and stress was created among critical care nurse. Historically the need to address critical care nurse shortage became more evident with issues in work environment by 2004.

Work setting issues of inadequate supply of equipment and a high stress level, impacted nurse's decisions to remain in an organization (Best & Thurston, 2004). Best and Thurston identified issues with nurse turnover and discussed job satisfaction of nurses as a solution in improving retention because dissatisfied nurses were less likely to remain in the nursing profession. Retaining existing nurses wasn't enough because age factors influenced the shortage.

In 2005, Buerhaus reported the average age of critical care nurses was 46, and the probability of their retirement in the year 2015-2020 was high. California, Texas and Arizona had 49% vacancies in 2005 for critical care nurses (Buerhaus, 2005). Historically, the need to address critical care nurses is evident.

Studies on critical care nurse's shortage and satisfaction play a role in retention and the development of strategies to counteract the shortage. Factors of socio-demographics and work settings provide implications for healthcare leadership. The brief historical view of the initiation of critical care nurses, job satisfaction, autonomy,

leadership, work settings, and nurse shortage enhances the understanding of recent literature on similar issues in the following literature review.

Current Findings

The current findings of this study were gathered from topics relevant to the job satisfaction of nurses in critical care. Various aspects of the nursing shortage presented in current findings, highlight the concern and significance to the area of study. Current literature is presented under the following main headings: job satisfaction, work settings and job satisfaction, and nurse socio-demographics. Within these headings several aspects of job satisfaction in regard to patient safety, patient outcomes, critical care settings, leadership, motivation, stress, demographic influences, retention, and organizational commitment provides a body of knowledge pertinent to this study on critical care nurses.

Nursing Shortage

Nursing shortage in the U.S. is an area of major concern. A national nurse shortage exists in the U.S. (Lin et al., 2008; AACN, 2008). A survey conducted by the BHP, (2004) predicted the shortage of critical care nurses would reach 29% by 2020. By the year 2025, the U.S. could have a shortage of 500,000 nurses (Buerhaus et al., 2008), while the aging baby boomers will worsen the nurse shortage because of increased healthcare need (AACN, 2009a). Rising job openings for nurses highlight the shortage.

In February, 2009, AACN, (2009a) predicted nurses would occupy majority of the 27,000 new jobs in healthcare; as a result the demand for nurses became higher. The overall nurse shortage and demand impacts critical care nurses. By 2015, there will be a need for 114,000 more critical care nurses in the U.S., a situation seen as a result of

nurses leaving the critical care setting (Mealer et al., 2007). Understanding the factors affecting the critical care nurse shortage and the impact on patient care validate the relevance of this study.

Population Demographics and Shortage

The shortage will gradually worsen (Poter-Wenzlaff & Froman, 2008). Various demographic factors worsen the nursing shortage. A change in the socio-demographics of the population impacts on the shortage. A study done in California on RN shortage provided data on population growth and a rising aging population to be influencing factors that worsen the shortage (Lin et al., 2008). Similar studies in Hawaii explain the changing demographics.

By the year 2020, 61% of the existing nurses in Hawaii will retire, reported the 2007 survey done by the HSCN (LeVasseur, 2008). By 2020 the aging population will increase in Hawaii (LeVasseur). Fewer nurses and higher number of patients in critical care creates challenges for healthcare organizations. The shortage of nurses is unsafe for patient care and is expensive for the healthcare organization (Ruggiero, 2005). Predictions made by HCSN increases awareness of the upcoming demand and shortage of nurses in Hawaii.

Nurse Demand and Supply

The imbalance in demand and supply worsens the shortage. The demand for U.S. registered nurses is projected to increase by two to three percent (Buerhaus, 2008a). In connection to the rising demand, the supply of nurses will be even lower related to the aging RN workforce and to reduced educational opportunities for educating new nurses

(Lin et al., 2008). An overall imbalance between demand and supply highlights the value of keeping critical care nurses satisfied and promoting retention.

Aging baby boomers will create a higher demand for critical care nurses. Advancing age brings a greater number of health issues. Carr (2009) reports the population of critical care patients to increase from higher life expectancy. Currently more than five million patients are admitted to critical care settings, annually (Carr). The rise in the number of patients will increase shortage and the demand for critical care nurses.

Hawaii's demand for critical care nurses is evident through the use of contracted nurses for specialty areas (HSCN, 2008). By the year 2020, the demand for registered nurses in Hawaii will rise by 28% whereas the supply grows by 8.9% (HSCN). Job dissatisfaction among critical care nurses allows for inferences on decisions in commitment to the organization. Nurse retention issues compromise the nurse shortage (Ruggiero, 2005; Poter-Wenzlaff, & Froman, 2008). Issues of demand and supply are relevant to critical care nursing in to Hawaii, a state distant from the other states in the U.S.

Demands on critical care nurses may be higher in Hawaii with a multicultural population. Carlton et al. (2007) indicated challenges in the nursing care of multicultural patients in the critical care settings within the hospital setting. Critical care nurses face other demands to promote recovery for the critically ill. Nurses strive to provide the best care for critically ill patients in the intensive care unit (Sarsfield, 2008). Preparing new graduate nurses to face a challenging career in critical care nursing increases the demands on educational leadership in nursing.

Nursing Education and Shortage

The shortage of nursing faculty reduces educational opportunities for all applicants. In 2006, the AACN reported greater than 32,000 applications at nursing colleges were rejected because of faculty shortage, although the applicants qualified as candidates. Poor access and inconveniences to getting an education in nursing could be factors that affect nurse shortage (Poter-Wenzlaff & Froman2008). Besides reduced access to nursing school, factors of inadequate faculty reduces number of nurse graduates.

The educational programs for nursing education within the U.S. are short of faculty available to teach nursing (AACN, 2007). The number of candidates rejected remained at 30,000 for the year 2007 (AACN). Reduced faculty leads to predictions of future shortages.

In 2007, The Council on Physician and Nurse Supply suggested that a 30,000 increase of nurse graduates annually would be required to overcome the U.S. nurse shortage, yet the AACN (2009a) survey provided data on a rise by only 3,069 students. Nursing educational organizations are unable to accommodate all applicants. Almost 50% of applicants were declined admission to nursing school due to faculty shortage, reports the AACN in its 28th annual survey on nursing programs in the U.S. in 2009. Besides the shortage of nurse faculty, student issues also affect enrollment.

Nursing students tend to leave nursing programs related to frustrations from poor self performance and subsequent feedback from nursing faculty (Poter-Wenzlaff & Froman, 2008). Dissatisfaction of faculty members with nursing education work also has an impact on the shortage. In 2007, the National League for Nurses reported results of a

study specifying the dissatisfaction of 44% of faculty with their individual work loads. Faculty and student issues impede the growth of nurse supply, resulting in worsening of the shortage.

Impact of Shortage

The significant shortage of the nursing workforce is expected to worsen (Poter-Wenzlaff & Froman, 2008). Healthcare organizations and patients are most likely to feel the effects of fewer nurses. A reduced number of nurses in critical care create issues in maintaining high quality care for patients in healthcare organizations. Patients in critical care are of a higher acuity level, and the nurse shortage compromises efficient patient care in these settings.

To curb the shortage in critical care, new graduate nurses have been trained to work in critical care settings at some hospitals in Hawaii. The effects of the shortage are also evident with the rise in new inexperienced graduate nurses who are recruited directly into critical care nursing as reported by A. Miho Johnson, nurse manager of a critical care unit in Hawaii (Personal Communication, October 26, 2008). Training new graduate nurses to critical care becomes necessary in light of the predicted shortage. The nurse shortage created concerns for the U.S. government.

Congress has taken an interest in the impact of the nurse shortage. To assist the current healthcare structure to resolve the shortage Congress has funded the Nurse Faculty Loan Program, Nurse Scholarship Program and critical nursing education based on the Title VII, Public Health Service Act (Cram, 2007). Such programs may not be enough for Hawaii because HCSN (2008) predicted the shortage to be significant in the state.

The HSCN's survey of 2007 reported a rise of the aging population by 75% by year 2020 (LeVasseur, 2008). The RN workforce in Hawaii will be reduced by 50-65% due to retirement within the following 15 years (LeVasseur). The reduction in RN workforce will worsen if dissatisfied nurses leave the islands of Hawaii.

The intention of RNs to leave their primary employer within the next 12 months was surveyed in Hawaii. Results provided information on 13% of RNs choosing retirement as a reason for their intent to leave within the next 12 months (LeVasseur, 2008). Besides the reasons of aging of the nursing workforce, factors of stress and burnout among nurses contribute to the shortage.

The shortage itself in turn affects the psychological well-being of nurses. The ongoing nursing shortage leads to stress, resulting in negative effects on productivity (Davies, 2008). Nurse shortage leads to burnout among nurses (Davies). Stress and burnout affects retention of nurses. The probability of the nurse shortage worsening associated with factors of stress results in implications for job satisfaction among nurses. The following literature review discusses the impacts of nurse shortage and factors of influence on job satisfaction.

Job Satisfaction

Nursing job satisfaction is vital in promoting retention of nurses in hospitals and preventing an increase in the shortage of nurses. Predictions are that by 2016, 587,000 new RN jobs will be created nationally and 59% of RN jobs are in hospitals (U.S. Bureau of Labor and Statistics, 2007). Several factors influence job satisfaction within the critical care environment. Supportive literature has been discussed to address job satisfaction of

nurses in respect to: job dissatisfaction and retention, performance, productivity, patient outcomes, and nursing leadership.

Dissatisfaction and Retention

Recent research in Hawaii has assessed the effect of job dissatisfaction on the nurses' intent to leave their jobs. The HSCN (2008) conducted a survey in 2007 on the intention of RNs to leave their primary employer within the next 12 months. Of the 4,986 nurses surveyed, 7.5% were very likely to leave their employer with the next 12 months and another 10.8% were somewhat likely (LeVasseur, 2008). Of combined 18.3% nurses likely to leave, 25% were found to be dissatisfied with their jobs and 11% were dissatisfied with salary (LeVasseur). Dissatisfied RN were mainly Boomers (52%) ages 41-59, and another 41% ages 40 and below.

Dissatisfaction among Hawaii critical care nurses can arise from several reasons. Factors creating job dissatisfaction as observed in the literature, including the work settings, staffing issues, personal issues, non-nursing duties, and nurse demographics, expand the scope of this study (Davies, 2008; Goldschmidt & Gordin, 2006; HSCN, 2008; LeVasseur, 2008; Ruggiero, 2005). Satisfied nurses in critical care are better motivated to work.

Highly stressful work settings in critical care nursing can result in poor motivation (Davies, 2008) and can result in job dissatisfaction. Additionally, the demands of highly efficient care combined with poor opportunities for professional advancement result in burn out of critical care nurses (Davies), and new nurses are equally affected. One way of improving retention and recruitment is increasing wages, implied Buerhaus (2008b)

whereas Westendorf (2009) suggested creating an attractive image of the nursing profession. Efforts to improve retention among nurses may reduce the shortage.

Research studies addressing issues in job satisfaction among nurses highlight areas of concern within healthcare. Empirical research provided data on the need to reduce work load on nurses to improve job satisfaction and promote higher retention (Rountree & Porter, 2009). Job satisfaction among ICU and ER nurses influences decisions and intent to stay in critical care nursing.

Job dissatisfaction among nurses in Hawaii was reported to be 25% in a 2007 HSCN survey (LeVasseur, 2008). Dissatisfied nurses tend to leave an organization or the workplace. Professional satisfaction promotes retention of nurses (Poter-Wenzlaff, & Froman, 2008). Satisfied nurses may be able to provide better care to patients who have greater acuity level in the critical care setting.

A critical care patient's demands on a nurse are greater in critical care units because of their serious illness. Nurses in an intensive care environment have to maintain a balance between patient satisfaction and personal job satisfaction, increasing stress levels (Goldschmidt & Gordin, 2006). Effective communication and teamwork are known to have a positive impact on job satisfaction among nurses (Goldschmidt & Gordin). The performance of the critical care nurse could be positively impacted with higher job satisfaction.

Nurse Performance

Poor nurse performance affects patient care outcomes. With increasing demand in healthcare settings, understanding motivational factors of satisfaction is essential for increased productivity (Zydziunaite & Katiliute, 2007). Absences of empowerment and

reduced autonomy, affected the nurse's motivation to work whereas motivation increased with effective collaboration, communication and respect for the nursing profession (Zydziunaite & Katiliute). Motivational factors require consideration to improve patient care outcomes through increased nurse satisfaction.

Factors of emotional intelligence that play a role in job satisfaction of critical care nurses have been reported in Hawaii. A study on urban hospital nurses in Hawaii, provide data on positive correlations of emotional intelligence to effective performance and organizational variables (Codier et al., 2008). Specific variables of retention and workplace settings affect safety in healthcare and in maintaining professional relationships at work. Emphasis on collaboration, professional ways of dealing with conflict, and promotion of healthy relationships (Codier et al.,) in critical care nursing could be improved with emotional intelligence. When nurses experience professional satisfaction, their employer healthcare organizations show enhanced retention rates.

The intensive care environment can bring moral distress and ethical dilemmas to nurses during the care of the dying patient. Such issues and distress affect their personal satisfaction with patient care (Hamric & Blackhall, 2007). The existing nurse shortage increases stress among critical care nurses (Davies, 2008). Nurses do not feel safe working under stress.

Safety is one of the basic needs required for motivation (Maslow, 1954). Maslow outlined basic needs to understand influences of motivation on a change in behavior (Harvath, 2008). Stressful work settings affect the performance of the nurse. Gilmore (2007) pointed out the importance of a healthy critical care environment to maintain job

satisfaction. If the environment is healthy, nursing staff will probably be more productive and job dissatisfaction lower.

Productivity and Patient Care Outcomes

Decreased productivity can result from job dissatisfaction. Nurse shortage and job dissatisfaction among critical care nurses impacts patient care (Ruggiero, 2005). Reducing the number of nurses in the ER or the ICU is unsafe. The presence of the nurse at the bedside is vital in the care of the critically ill (Hain, 2007) and the nurse shortage could compromise staffing of the unit. With the rise in the elderly population within intensive care units, continuous efforts to improve care must remain proactive (Sarsfield, 2008). To promote care, interpersonal skills are required.

The turnover among nurses elevates the stress of the nurses left behind who often have to adjust to new nurses (Rondeau, Williams, & Wagar, 2008). In contrast, job dissatisfaction of nurses may not cause nurses to leave if opportunities for employment at other hospitals are fewer. A reduction in job availability in the market for nurses results in higher commitment (Rondeau et al.). The current situation does not reflect adequacy of the nurse workforce in Hawaii (LeVasseur, 2008). A review of the role of leadership factors is useful in understanding possible factors affecting the job satisfaction among nurses in Hawaii.

Effective leadership and patient outcomes impact nurse job satisfaction. Positive patient care outcomes resulted in job satisfaction among nurses in a study conducted on 120 new RN graduates (Anderson, Linden, Allen, & Gibbs, 2009). Improvement in patient's health condition, work as motivators for nurse job satisfaction.

Leadership and Job Satisfaction

Evidence on a nurse manager's leadership style impacting the job satisfaction among nurses, exists (Cummings et al., 2008; Sellgren, Ekvall & Tomson, 2008). Effective leadership styles bring productive outcomes. A positive working environment in critical care was dependent on leadership involving effective communication and interpersonal skills among critical care nurses (Harris, 2008). Empowering nursing employees promoted job satisfaction (Walker, 2008). Leaders can enhance employee job satisfaction by taking the time to recognize individual value and contribution to the unit.

Identification of nurse characteristics that are specific to critical care nursing and their subsequent effects on job satisfaction has implications for nursing leadership. A culture within a healthcare organization that values nurses will promote retention, resulting in efficient patient care (Robinson, 2001). Management culture and leadership in terms of safety within healthcare are values that are important to organizational members (Chuang, Ginsburg & Berta, 2007). One way effective leaders can promote retention is by recognizing signs of job dissatisfaction.

Retention issues within nursing have been widely studied (ANA, 2008; Cary, 2008; McGuire & Kennerly, 2006). Finding the level of job satisfaction among nurses and the specific demographics involved provides direction to nurse managers in promoting retention. Addressing job satisfaction is useful to nursing leaders in recruitment and promotion of nurse retention (Ellenbecker, Porell, Samia, Byleckie & Milburn, 2008; Zangaro & Johantgen, 2009).

Nursing leaders can use other ways to reduce stress levels. Leadership emphasis on the empowerment of nurses has shown to reduce work tension and increase job

satisfaction (Davies et al., 2006). Empowerment increases motivation to work in the critical care setting. A positive relationship of motivation and consequent nurse job satisfaction to the empowerment of nurses has been reported (Kuokkanen et al., 2009). Leaders can take active steps to address motivational issues.

Ongoing demands from healthcare reforms and changing guidelines, reinforces the need for stronger leadership. Supportive leadership is required to maintain job satisfaction in healthcare (McGilton, McGillis, Wodchis & Petroz, 2007). Reducing the work load and increasing support from peers and leaders work as motivators for nurses (Lavoie-Tremblay, Wright, Desforges, & Gelinas, 2008). Besides the nurse manager, the clinical educator leadership can be a form of support for critical care nurses.

Nurses entering into critical care nursing may not always be aware of several challenges in the work settings. Nurse educators can improve awareness of critical care settings for the new critical care nurse. Hough (2008) recommended adequately preparing nurses on nursing ethical issues and decisions involved in critical care nursing. Promoting a positive attitude towards critical care nursing among nursing students may increase the number of applicants into new graduate critical care programs.

Job satisfaction is known to have implications for clinical educators who participate in the clinical development of professional nurses (Davies, et al., 2006). The increase in the number of new graduates in the hospitals creates challenges to clinical educator leadership in preparing and developing new and ongoing nursing staff with an awareness of issues in job satisfaction. Educational leaders must promote a sense of organizational commitment in new nurses by working on issues affecting job satisfaction. Efforts to improve job satisfaction that promote organizational trust have been identified

as useful to healthcare organizations (William, 2005). Nurse educators and other leaders in healthcare in their leadership position could benefit from evaluating the presence of healthy work settings in the critical care environment.

All leaders in nursing may not possess required qualities in promoting nurse job satisfaction. Healthcare organizations with opportunities of educational programs, allow for the development of essential skills in nursing leadership (Swearington, 2009). For long term productivity, taking leadership to a higher level with resulting improvement in job satisfaction is beneficial to the organization in terms of cost and patient care outcomes.

Creating and maintaining a healthy work environment depends on an authentic form of nursing leadership (Shirey, 2008). An authentic leader goes beyond basic duties to include personal commitment, dedication and values aimed at promoting healthy work settings (Shirey). Nurses working in a critical care environment may benefit from efforts taken by nursing leaders in promoting a workplace with high emphasis on patient safety through nurse job satisfaction.

Work Settings and Job Satisfaction

The work environment for critical care nurses is unique where nurses are expected to care for patients with high acuity levels. President of ANA Rebecca Patton stated, "At a time when the nursing shortage threatens to impact the quality of patient care, we owe it to the nursing profession and the public we serve to work toward the successful integration of newly graduated nurses into the work environment as well as improving the working conditions for experienced nurses" (ANA, 2008, p. 1). Understanding the work environment and its impact on job satisfaction is beneficial to leadership in

promoting strategies for job commitment. New nurses can function more effectively in a nurturing and mentoring form of work environment (Persaud, 2008; Grossman, 2009). Literature on critical care work settings and how it impacts on patient safety, work motivation, stress, burnout, organizational efforts, commitment, and retention, increase the scope of the current study.

Critical Care Work Settings

Critical care nurses like any other nurses, require a healthy working environment for productive nursing practice. A plan to address and eliminate barriers, along with a sincere commitment by a healthcare organization is required. The formation of healthy work environments is evidenced by positive outcomes in patient care produced by a given organization (Codier et al., 2008; Meraviglia, 2009). Patients and families show varied responses to work settings.

Patients have individual perceptions of the critical care environment. A few patients feel a sense of fear and disconnect in critical care units (Shattell, Hogan & Thomas, 2005). Working in stressful work settings, dissatisfied nurses may worsen such feelings for critical care patients through poor productivity.

Past research on work settings with implications to job satisfaction is relevant to the current study. Salary and present jobs created a sense of job dissatisfaction among 18.3% of nurses in Hawaii (LeVasseur, 2008). The work settings and benefits impact nurse satisfaction. Flexibility in work hours and schedules of nurses had a positive effect on job satisfaction (Wild, et al., 2006; Swaidek, 2009). Nurses are more inclined to stay at the current workplace when the work settings are conducive to job satisfaction.

The organizational culture impacts the wellbeing of nurses (Stone, Du, & Gershon, 2007); making strategies to address issues in work environment a priority. The critical care environment, like any other work setting, has an impact on employees. The expected outcomes of healthy working relationships and safe patient care are lowered with nurse dissatisfaction. Nursing leadership impacts work environment factors (Laschinger, 2008). Leaders in healthcare organizations can take responsibility in promoting job satisfaction of nurses.

Leaders can be proactive by reviewing factors in the work settings that affect employees. With the rising shortage, Buerhaus (2009) has made suggestions for creating an "ergonomic environment" (p. 6) to promote retention of nurses. Awareness among leaders of the impact of work settings involving care of the critically ill patient on the psychological wellbeing of nurses, aids in understanding stress levels. Ongoing ethical issues arise in the critical care environment. The nurse experiences patient related ethical issues that have on impact on care of the critically ill patient in critical care nursing.

Specialized units like the intensive care unit can create stress for the critical care nurses from various ethical situations including, new patient care practices, technological changes, and challenging care (Braithwaite, 2008). Nurses take responsibility to advocate for the patients and the environment should be conducive for effective practice. The critical care nurse protects the rights and autonomy of the patient with ongoing assessments, communication and maintaining ethical standards (Wlody, 2007).

Besides ethical dilemmas, the structural and behavioral aspects of organizational settings in critical care nursing impact the job satisfaction of nurses. An unhealthy work environment is positively related to staff shortage and job dissatisfaction among nurses

and poor outcomes in patient care (American Organization of Nurse Executives, 2006). Strategies developed by an organization for the development of nurses within the critical care work setting, improve productivity. Research provides data on opportunities for advanced practice, recognition, and collaboration among peers created a healthy climate in critical care (Grossman, 2009). Satisfied nurses will continue to stay at an organization.

Poor retention of nurses creates financial losses to the health organization and produces poor patient outcomes (Haut et al., 2006). To prevent losses, policies and procedures in the work settings allow individuals to meet their personal and organizational goals, creating a specific culture of a healthcare environment. Transformational leadership style has a positive impact on job satisfaction, retention, and on patient care (Casida & Pinto-Zipp, 2008). Use of effective leadership and creating work settings that promote job satisfaction among nurses, leaders will improve patient safety in the ER and ICU.

Patient Safety in Critical Care

The higher patient acuity in critical care units creates a need for increased number of nurses in critical care units. Adequate nurse staffing in critical care settings will ensure patient safety. According to a past study, a healthy correlation between increased numbers of registered nurses to positive outcomes in patient care within the intensive care unit, as evidenced by reduced mortality, hospital acquired illnesses, and respiratory failure (Kane et al., 2007). When nursing staff are inadequate the increased workload on each critical care nurse can create dissatisfaction and unsafe practice.

Inadequate staffing levels at work affect patient outcomes (Garrett, 2008) and a work environment with staffing issues is unhealthy for nurse satisfaction. A study done on 10,184 registered nurses along with 232,342 patients, at greater than 150 hospitals in Pennsylvania, indicated a lower patient mortality risk within a caring nurse-practice workplace environment in healthcare (Aiken, Clarke, Sloane, Lake, & Cheney, 2008). The quality of care should be a priority for every healthcare organization.

Burdened with rising costs and budgets, healthcare organizations addressed inadequate staffing issues by shifting nurses from one department to another or by increasing the number of nursing technicians on the unit (Mumolie, Lichtig, & Knauf, 2007). Demands of working in different hospital units create challenges for nurses in maintaining patient safety. Decisions to manipulate work settings without a research base result in stress (Mumolie, et al., 2007). Other attempts to meet rising demands by adding to work load of critical care create safety issues.

An excessive work load on the nurse in the critical care setting compromises patient safety (Montgomery, 2007). A positive work environment promotes effective patient care and can reduce errors. In response to medical errors and poor confrontation of issues among nurses, the then AACN President Kathy McCauley said, “We must build environments that support and demand greater candor among staff if we are to make a demonstrable impact on patient safety" (American Health Line, 2005, p. 1). The nursing work environment and the burn out experienced by nurses’ plays a significant role in patient safety (Braithwaite, 2008; Laschinger & Leiter, 2006). Safe structured healthcare organization and the nursing unit environment have a tremendous influence on safety of the unit (Mark et al., 2008).

Work Motivation

Motivated nurses can be more productive. Factors of stress affect nurse's health and can reduce motivation to work in the critical care setting. Stress cause psychosomatic disorders in nurses (Kane, 2009). The actual work, work settings, nurse job satisfaction, and personal factors at home were the main causes of stress for 106 nurses in a study by Kane. Attention to nurse health is necessary for patient and nurse safety.

According to a past empirical study, safety and the mental health of nurses have an influence on job satisfaction (Nemseck, 2007). Occupational health of nurses can be promoted by using organizational strategies based on magnet status criteria. The organizational climate affects the wellbeing of nurses (Stone, Du, & Gershon, 2007). Healthy nurses promote patient safety in critical care because specialized units involve greater nursing responsibility.

The responsibility of nurses in critical care nursing involves making informed and rapid decisions for patients with multiple diagnoses (Comer, 2005). Strategies directed to encourage higher motivation to work in the critical care environment benefits patient care. A comprehensive approach directed at improving nurse satisfaction in multifaceted critical care setting, may be the key. Davies (2000) suggested using opportunities of personal professional growth as a way to increase motivation of critical care nurses. Professional opportunities may not be the only factor affecting nurse's motivation.

Besides personal gain, factors of leadership and patient care outcomes increase motivation among nurses. The caring aspect involved in patient care, work as motivators for nurses (McConnell, 2008). Motivated nurses may be less like to leave critical care units. Results of a study of 1,780 registered nurses in Southern Michigan at 10 hospitals

reported areas of job satisfaction to include: nurse salaries, benefits, leadership, and patient care issues (Fletcher, 2001). Based on these motivating factors of job satisfaction, nurse leaders can promote retention of critical care nurses.

Nurses value several common factors in the critical care work settings. Satisfaction is influenced by salary, benefits, cleanliness, quality of care, and safety (Schmalenberg & Kramer, 2008). In contrast, work factors like the number of hours worked does not necessarily affect job satisfaction in healthcare.

No significant relations were seen between hours worked and job satisfaction for home healthcare aides, although safety factors were found to be related to job satisfaction and retention (Sherman, Gershon, Samar & Pearson, 2008). The need for safety and belonging forms an important aspect of the theoretical framework of motivation that guides the present study. Maslow's (1954) theoretical framework of the five-level hierarchy of needs addresses motivational factors that impact job satisfaction. Self actualization, a level in Maslow's framework, cannot be achieved among nurses when personal and professional needs are unmet.

Achieving a level of self actualization does not end motivation. A sense of self actualization motivates individuals to help others (Lloyd & Burke, 2007). The emphasis on motivation to improve job satisfaction for nurses has been used effectively in past studies (Zydziunaite & Katiliute, 2007). Nurses can become less motivated while functioning under stressful conditions in the critical care work settings.

Additional efforts to understand the work environment in nursing indicate the emphasis on job satisfaction. A study by Schmalenberg and Kramer (2008) supported efforts of the Essential of Magnetism (EQM) as a measuring tool to identify specific

work processes among nurses and their interrelationships to influence a positive work environment within healthcare. The EQM discusses the importance of three major factors of the work environment: structure, process, and outcomes (Schmalenberg & Kramer). The study results were directed on the need to evaluate the work environment of nurses as a measure to improve job satisfaction among nurses.

RN motivation to work in the critical care setting increases with recognition: an important premise on which motivational framework is based in the work environment. A national survey was conducted on critical care nurse work environment in 2006 and 2008 by the American Association of Critical Care Nurses along with the Bernard Hodes Group and Gannett Healthcare Group (Ulrich et al., 2009). The survey results of 2008 revealed recognition to be a factor for critical care nurse job satisfaction. Recognition was appreciated by nurses not only from families and patients but also from peers and leaders. New graduates were reported to feel a sense of inadequate recognition and support in the critical care units (Ulrich, et al.) which can be stressful.

Demands, Stress and Burnout

The rising demand, stress and burnout are factors that affect motivation to work among critical care nurses. Burnout of nurses has an impact on retention (Cawthorn & Rybak, 2008). Demands made by patients on critical care nurses are extreme because critically ill patients require highly efficient care for recovery. A nurse in the intensive care unit typically reviews multiple lab values, monitors, intravenous pumps, and data from different sources to assess patient's status and make informed decisions (Eagan, 2006), raising stress level and demand on the critical care nurse.

Efforts in maintaining collaborative care and coordinating care from various disciplines, creates additional demands on the critical care nurse. Nurses working in the Intensive Care Unit (ICU) had a higher level of post-traumatic stress compared to general nurses, which emphasizes the need to direct interventions to improve job satisfaction of ICU nurses (Mealer et al., 2007). Steps directed towards improving work settings can enhance job satisfaction of nurses and influence retention. Critical care nurses work in a setting where a higher exposure to several life threatening procedures and technology is involved (Sole, Klein, & Mosley, 2009). The critical care units can create ongoing challenges for nurses.

In comparison to other hospital units, the critical care unit demands ongoing care in a highly technological work environment. And despite the best efforts in nursing care, some patients may succumb to their illness, leaving a few nurses in despair. In light of these issues the work settings must be adjusted to maintain the motivation of nurses in their commitment to the organization (Cram, 2007). Promoting nurse job satisfaction should be one of the responsibilities of any healthcare organization.

Organizational Efforts for Job Satisfaction

Healthcare organizations must continuously develop strategies to promote retention of nurses. Conducting a review of nurse satisfaction in a given healthcare organization is essential based on the current nurse shortage (Shebesta, et al., 2006). Beneficial outcomes are seen when organizations conduct a constructive overall review of the organization and of the specific hospital units in order to gather data that will be effective in promoting retention of nurses (Boyle & Miller, 2008). Boyle and Miller suggested using the National Database of Nursing Quality Indicators (NDNQI) to gather

nurse turnover and job satisfaction data, in order to make positive changes and monitor turnover at healthcare organizations.

Nurse dissatisfaction leads to turnover and an adverse effect at the individual, organizational, and community level. The enormous efforts to reduce the mortality and morbidity of patients requiring critical care should go hand in hand with emphasis on reducing job dissatisfaction among critical care nurses. The cost of replacing nurses varies and is high (Hayes et al., 2006). Cost containment is enhanced by retaining nurses.

Peer collaboration among critical care nurses has been studied to promote a positive work climate among nurses. Networking with other critical care nurses and creating meaningful connections are useful to organizations (Grossman, 2009). Effective communication among employees brings a healthy atmosphere in critical care nursing. The impact of good communication is evident among family members of critical care patients.

Fulfillment of the needs of family members requires good communication and collaboration among physicians, nurses, and leaders in the intensive care setting (Omari, 2009). Interpersonal relationships in critical care work settings impact nurse satisfaction. Improved patient care outcomes and nurse job satisfaction depend on healthy nurse physician relationships in critical care nursing (Haut et al., 2006). Productive collaboration has a positive effect on new critical care nurses.

Nurses using effective communication towards new RN graduates may promote retention. The new RN graduate is challenged with the transition from student to becoming part of the healthcare team as a professional (Winfield, Melo & Myrick, 2009). Retention can be enhanced by mentoring new nurse graduates using the right attitude.

Rodan (2008) suggests the positive impact of a strong network structure and the importance of using effective individual thinking and reasoning in choosing the right mentor for learning to take place. Nurses can promote job satisfaction for new nurses by providing a nurturing environment.

Predominantly new nurses in critical care may succumb to unhealthy work settings. Research data on the existence of a hostile environment towards new nurses in an acute care is present (Duchscher & Myrik, 2008). A work environment creating uneasiness is unsafe and the need for safety promotes motivation, according to Maslow (1954). Nursing education can be transformed in the right direction by maintaining the focus on safe practice, competence, and responding to changes in the global healthcare environment (Ellis and Hartley, 2008). Proactive leaders promoting support and guidance for new nurses may cause nurses to remain with the organization.

Commitment and Retention

Besides job satisfaction among nurses, the work setting has an impact on actual commitment to a healthcare organization. Organizational commitment is dependent on the job satisfaction of employees (Kuokkanen, Suominen, Harkonen, Kukkurainen, & Doran, 2009). According to past empirical studies, work conditions influence job satisfaction for nurses. A study on full-time Canadian registered nurses with more than 10 years of experience provided data on the negative impact of work environment culture on their commitment, although the results concluded a moderate level of nurse job satisfaction (Gregory et al., 2007). Efforts taken to improve job satisfaction positively reflect on retention.

Nurse retention efforts works in the best interest of a healthcare organization. Working on retaining nurses is a high priority of an organization, in light of the current shortage (Leurer et al., 2007; Solovy, 2006). Efforts in creating work environments of support through effective policies in an organization, along with ensuring appropriate implementation of such policies, influences job satisfaction (Gregory et al., 2007). Nurses leave their jobs in search of work factors, notably better income, conveniences, and safety (DHSS, 2006). Ongoing developments in work settings have become necessary to promote retention.

Work Setting Developments

Critical care units can be volatile depending on types of patients. Intensive care environments in the U.S. are constantly undergoing changes to improve job satisfaction of staff and to provide the best patient care (Bles et al., 2008). The critical care environment is highly stressful to nurses where patients require highly efficient and ongoing care (Bles, et al.). The critical care environment will undergo further changes related to technological advancement and attempts to improve patient care.

Research has revealed the importance of making work setting changes using support, adequate time, and with input from all stakeholders including nurse managers in critical care (Bles et al., 2008). Input from critical care nurses for changes in work setting is useful. Changes in organizational design have an impact on job satisfaction and the stress level of nurses (Davies et al., 2006). The work settings in critical care should have an ongoing evaluation.

Nursing organizations have shown interest on the need for improvement in work environment. President Kathy McCauley of the American Association of Critical Care

elaborated on the support for a healthy critical care environment (American Health Line, 2005). Efforts by the American Association of Critical Care Nurses by providing definitions and by supporting the creation of healthy work environments remain in progress (American Health Line). AACN (2008) reported directing legislative and collaborative efforts to find effective strategies to address the shortage of the registered nurses. One of the strategies could include studying socio-demographics of nurses.

Nurse Socio-demographics

Hawaii has an ethnically diverse population. Nurses in Hawaii are of varying demographics (LeVasseur, 2008). While the work environment has an impact on nurse job satisfaction, certain demographics play a role as well (Ulrich et al., 2009). A growth in cultural diversity is seen in the U.S. (Glazner, 2008) and especially among nurses is (Lowe & Archibald, 2009). The diversity in ethnicity has implications to nursing education and practice (Maddelena, 2009). Nurse's job satisfaction may vary among nurses with influences of individual characteristics.

Nurse's characteristics fall in two categories: intrinsic and extrinsic (Joseph, 2007). The intrinsic ones include inborn traits of caring while the extrinsic characteristics of education and experience develop and influence nursing function (Joseph). Understanding the specific nurse demographics in critical care nursing is essential in addressing job satisfaction to promote retention. Being an isolated state and facing higher financial costs of replacing critical care nurses in Hawaii, efforts in promoting job satisfaction and productivity become necessary.

Demographic Changes

Varying nurse demographics in Hawaii implicate variations in socio-demographics among critical care nurses in Hawaii. Changing demographics among nurses requires efficient planning of healthcare (Collins & Collins, 2007). Past nurse demographics are not the same as those in contemporary nursing units; these demographical changes among nurses have become largely responsible for the nursing shortage in the U.S. as well as in Europe and Japan (Cram, 2007). The possibility of retirement among nurses adds to further challenges to nurse shortage.

The goal of retirement for 55% of the nurse population in the U.S. is predicted between the years 2011 and 2020 (Cram, 2007). Anticipated retirement among nurses will worsen the shortage. Demographics play a role in decisions of organizational commitment as well. Specific characteristics of nurses as well as work settings have an influence on intent to stay in bedside nursing (Letvak & Buck, 2008). Specific demographics have an influence on retention.

Demographics of gender have shown to influence decisions of commitment among nurses. In a study done on 1201 nurses, Ferreira (2007) found the female gender to be significantly higher in organizational commitment compared to the male. This result could be impacted by the higher number of females in the nursing profession. Female nurses make up 90% of the total critical care nurses (Siela, Twibell & Keller, 2008). The recent trend and changes in nurse socio-demographics can cause frustration and affect motivation to work.

As hospitals are faced with ongoing healthcare reform, the emphasis on maintaining nurse job satisfaction is necessary to prevent significant turnover. The

cultural diversity among nurses has advanced (Lowe, 2009). Critical care nurses among other nurses in Hawaii are multi-ethnic and bring a rich blend of culture to nursing care as indicated LeVasseur, (2008). Hawaii is multicultural with a wide ethnic diversity among patients as well. Providing culturally competent care can create challenges for nurses arising from increased time involved in caring for patients with diversity, informs Maddalena (2009).

Besides diversity, the specific characteristics of critical care nurses in Hawaii may provide data in assessing correlations to job satisfaction. Individual nurse socio-demographics among Hawaii critical care nurses may have an impact on job satisfaction. Factors such as: educational level, autonomy, and skills in critical thinking among nurses influenced job satisfaction (Zurmehly, 2008). Nurses should be able to work collaboratively in the ICU and ER.

Good working relationships promote effective collaboration among critical care staff. Research on nurse demographics and their relation to job satisfaction will have implications for hospital administrators as well as nurse managers to design strategies and policies to accommodate the specific needs of the nursing staff in Hawaii. Job satisfaction is known to have implications to leadership (Chen, et al., 2009). Improving critical care nurse's job satisfaction will promote retention and prevent worsening of the current Hawaii shortage among nurses.

Nurse Demographics and Satisfaction

Specific characteristics of nurses provide data for making correlations to job satisfaction. A research survey done on 302 hospice nurses located in 60 sites provided data that there were no significant correlations of nurse job satisfaction to the

demographics such as age, ethnicity, years of experience, or seniority in an organization (Miller, 2008). On the other hand, different ethnic cultures in nursing have shown variations in job satisfaction.

According to past studies, personal demographics had an impact on nurse job satisfaction across cultures. Past research in Lebanon has shown married nurses to be less dissatisfied than unmarried ones (Yaktin, Azoury, & Doumit, 2003). Younger nurses who were less than 30 years in Lebanon were dissatisfied with reduced opportunities for professional growth (Yaktin et al.). Influences of work settings for different ethnic cultures may vary.

Immigrant nurses in the U.S. may vary in their job satisfaction levels. With the rising shortage the hospitals often rely on immigrant nurses to fill in the vacancies. Chinese immigrant nurses indicated a higher level of job satisfaction in the American work environment related to a positive approach to challenges (Xu et al., 2008). Past data on cultural impacts on the job satisfaction among nurses has implications for an ethnically diverse population of Hawaii.

A steady rise is in nurse diversity is evident among nurses as a result of the nursing shortage. New RN graduates are of different ages, include many more males, speak different languages, and may have two different occupations (Suhr, 2009). The difference in age among nurses causes collaboration issues resulting from different view points (Sudheimer, 2009). As a result of changing demographics among nurses, leaders should be better prepared in promoting adjustment. The motivation for new nurse graduates comes from working in healthy and supportive work settings where diversity is warmly accepted, informs Suhr.

Job satisfaction for critical care nurses may not be impacted by all demographics. Research on critical care nurses in one intensive care unit concluded that nurses' job satisfaction with respect to effective communication among other nurses did not depend significantly on factors of age, sex, experience in critical care nursing or the education of the nurse (Manojlovich & Antonakos, 2008). Bedside nurses and nurses in leadership positions have varying demographics and job satisfaction levels. Personal and situational factors among nurse managers were found important in ensuring satisfying work settings (Laschinger, Almost, & Purdy, 2007). Work experience influences job satisfaction levels among nurses.

The years of experience worked in critical care improves the self confidence of nurses. Chances of remaining in the current workplace show improvement with nurse self confidence and job satisfaction in work (Cary, 2008). Although the years of experience and benefits influence motivation to work, patient care outcomes create greater job satisfaction.

Besides materialistic gain, nurse's job satisfaction was reported to be positively related to the ability of providing quality nursing care in a surrounding that promotes nursing practice (Smith, Hood, Waldman, & Smith, 2005). Job dissatisfaction among critical care nurses does not always affect patient care. Despite a somewhat low job satisfaction level, nurses have reported providing high quality of care (Laschinger, 2008).

Along with good patient outcomes in the ICU and ER, nurse motivation depends on whether personal basic needs met. Based on Maslow's (1954) premise on meeting the basic needs of individual nurses, a link to satisfaction can be made. Praise, recognition of nurses, autonomy, and responsibility has been reported to improve work motivation and

influence job satisfaction (Wild et al., 2006). Patients on the other hand, may show a difference in response for different nurses.

Individual personalities of nurses vary in any given hospital setting. The personality of the nurse affects patient care outcomes. According to a research study, patients had better responses to nurse openness than to nurse neuroticism (Teng, Hsu, Chien, & Chang, 2007). Nursing leaders should be aware of such characteristics to promote safe patient care.

A healthy organizational climate promotes improved patient care outcomes. Nurse competence, a healthy work environment, and positive changes in nursing practice promote retention of nursing (Stone et al., 2006). Attractive and healthy work settings increase enrollment numbers in nursing educational programs. Higher number of applicants for nursing education may reduce the anticipated worsening of the nursing shortage (Stone et al.). Along with increasing enrollment of nursing students, nurse educators should promote contemporary practice.

Nurse educators should keep abreast of all changes in healthcare to prepare individuals. Opportunities for faculty growth may not always be available. Keough (2006) recommends that nursing faculty should challenge organizations to improve faculty practice to promote contemporary nursing. Supervisory feedback to faculty should emphasize individual student needs (Bates & Burbank, 2008). Nursing students should be made aware of the work environment as it relates to present nursing based on specialty areas of interest.

Nurse Demographics and Work Settings

Nurses who find their present work environment to be attractive in benefits will experience fewer turnovers despite increased job opportunities (Rondeau, Williams, & Wager, 2008). Nursing managers should craft techniques and use efforts in providing healthy work settings for nurses, suggests Rondeau et al. Such environments may enhance the perception of the critical care unit to be a dynamic place of work in a given healthcare organization, resulting in retention of critical care staff. The motivation to continue working despite stressful situations is enhanced from the difference made by nurses to patients and to the healthcare organization (Cram, 2007). Personal satisfaction motivates nurses.

In contrast, personal satisfaction may not be the only motivation factor for nurses. Spiritual satisfaction in the form of helping patients creates a sense of job satisfaction for nurses (Ravari, Vanaki, Houmann & Kazemnejad, 2009). Job dissatisfaction is not related exclusively to various stress factors in the work environment. Ongoing interruptions and re-directions are common in the critical care work environment for nurses (Tang et al., 2007). Nurses in critical care work together with a team where ongoing changes in patient care are common.

Critical care nurses form an essential aspect of the collaborative team in critical care units. The social climate within the critical care unit creates additional demands on the critical care nurses related to serious illness. Increased exposure to grieving families and related death and dying is seen in critical care units can cause emotional distress for the nurse (Badger, 2008). The maintenance of emotional stability among critical care

nurses is vital in a highly stressful environment created by a variety of clinical experiences and challenges (Badger).

Across cultures among Arabic nurses, rewards and benefits were not applicable to the culture to promote job satisfaction, (Misener et al., 1996). Arabic nurses did not base their job satisfaction on factors of work settings. Salary and opportunities for growth have known to be factors that affected job satisfaction in the U.S. (Schmalenberg & Kramer, 2008). Issues in the work environment can affect the job satisfaction of nurses although the organization serves as a means of financial support for nurses. Nurses do not always become dissatisfied with work settings based on their cultural background.

Immigrant nurses have reacted differently to American work settings. Chinese nurses in the American work environment were found to have a higher level of job satisfaction, indicates Xu, Gutierrez, and Kim (2008). The job satisfaction was higher because of the positive approach held by these nurses to a new environment, indicates Xu, et al. Oblivious to the diversity among nurses, the motivation to work can be improved with good leadership and collaboration.

Leadership and Motivation

The registered nurse must work collaboratively in an efficient manner to meet the goals of patient care. Higher job satisfaction with leadership, work settings and interpersonal relationships among nurses increases overall nurse job satisfaction (Pittman, 2007). Such job satisfaction may impact a nurse's motivation to take on additional roles in nursing. Leaders enhance retention of nurses using empowerment, as evidenced by a survey done on 3156 nurses at 217 hospitals (Laschinger, Finegan & Wilk, 2009). Support from leaders can alleviate issues in retention of nurses.

Besides an awareness of the diversity, leaders must take active steps to promote sensitivity to differences. Diversity among U.S. nurses is increasing both in ethnicity and culture (Chen, et al., 2009). The perception of the nursing practice environment for Asian nurses was found to be different compared to American nurses (Chen, et al., 2009) Nurses should be better prepared to handle diversity both among themselves and in patient care.

An awareness of the national and global diversity is useful in Hawaii because of the high ethnic diversity. Axley (2008) suggested using measures in preparing nurses to understand diversity and function in a global environment. Leaders in healthcare should provide support and promote adaptation and retention of foreign nurses (Chen, et al., 2009). Promoting retention will reduce the shortage.

Suggestions have been made of using critical care nurses as nurse educators to meet faculty demands and needs in nursing education. If critical care nurses took an additional educator position, their expertise in critical care may be beneficial to students, healthcare organizations, nursing academic institutions, and patients (Siela et al., 2008). The shortage of nurses and faculty may be reduced if critical care nurses take the challenging role of nursing clinical educators and continue practice in clinical settings.

Conclusions

The nurse shortage in Hawaii is increasing and is anticipated to worsen (HSCN, 2008). Reducing shortage depends on efforts to maintain nurses in their current jobs. Critical care nurses who have poor job satisfaction may have a desire to leave (Davies, 2008) and this turnover impacts patient care (Ruggiero, 2005). The high demand for critical care nurses in Hawaii, varying nurse socio-demographics, and the unique work

settings in critical care nursing, impacts job satisfaction among nurses and patient care outcomes.

The work environments in critical care nursing (Gilmore, 2007) and specific socio-demographics (Pittman, 2007) have a relationship to job satisfaction of nurses. The success of a healthcare organization depends on organizational culture and leadership (Casida & Pinto-Zipp, 2008) while job dissatisfaction of nurses affects commitment to the organization. The literature review emphasizes the role of leadership factors, the critical care environment, stress and burn out experienced by critical care nurses, job dissatisfaction of nurses, and socio demographic factors, in impacting the job satisfaction of nurses.

Summary

Historically, the shortage of nurses has been impacted by job dissatisfaction among nurses (Robinson, 2001). A shortage of nurses exists and is increasing in the U.S. (Lin et al., 2008; Poter-Wenzlaff & Froman, 2008; AACN, 2008). According to the HSCN (2008) a large number of nurses in Hawaii will retire by 2020 worsening the shortage.

The imbalance with supply and demand is further worsened by inadequate nursing faculty (Lin et al., 2008). Addressing job satisfaction may promote retention of nurses in critical care and reduce the nurse shortage. Organizational commitment is dependent on job satisfaction. Dissatisfied nurses are less likely to remain committed.

In critical care nursing the staffing must be adequate to avoid compromising patient care. Hain (2007) explained that the presence of the nurse at the bedside is valuable for the care of the critically ill. Changes made in the work settings should not

affect patient care. A healthy work environment promotes safe patient care (Meraviglia, 2009). Socio-demographics among nurses create different influences to job satisfaction.

Specific characteristics of nurses and their work settings must be considered to promote retention of nurses. Work environment and safety impacts job satisfaction for nurses (Schmalenberg & Kramer, 2008). The work settings in critical care involve patients with higher acuity making it necessary to have settings with safe nurse practice.

Chapter 3 provides a detailed rationale with discussion of the quantitative study with a correlational research design. Data collection, sampling, population, and data analysis provided direction to the current study. The MMSS tool used for this study has been discussed along with statistical analysis that was used for the data collected from the survey.

CHAPTER 3: METHOD

The shortage of nurses is a significant issue in healthcare. The link of job satisfaction as an important factor in maintaining nurses in their current place of work has been reported in several studies (Gregory et al., 2007; Letvak & Buck, 2008; Schmalenberg & Kramer, 2008; Walker, 2008; Zangaro & Johatgen, 2009). The purpose of this quantitative study with a correlational research design was to quantify the level of job satisfaction and explain the relationship, that may or may not have existed, between the 10 socio-demographics variables and the eight MMSS job satisfaction subscales among part-time and full-time nurses currently working in the critical care settings of the emergency room or intensive care unit and employed on the island of Oahu, Hawaii.

The independent variables for this study were the 10 nurse socio-demographic variables to include: marital status, shift worked, average hours worked per week, level of education, years of experience in critical care nursing and in current hospital, hours of work, cultural group, salary, and household income. The dependent variables were the eight subscales of the MMSS measuring the critical care nurse's level of job satisfaction to include: "extrinsic rewards, scheduling, balance of family and work, coworkers, interaction opportunities, professional opportunities, praise and recognition, and work control and responsibility" (Tourangeau, et al., 2006, p. 129). The present study used the MMSS tool to gather information from a purposive sample of a total of 117 currently practicing critical care registered nurses in Hawaii.

This study was conducted over two months at three major medical centers in Hawaii in order to correlate the influence, if any, of socio-demographics to the job satisfaction scales of the MMSS tool among critical care nurses in Hawaii, using the data

provided from the inquiry. Findings of this study may be useful to Hawaii hospital administrators, nurse managers, recruiters, and nurse educators in improving the job satisfaction of critical care nurses. Chapter 3 provides information on the actual design, appropriateness of this study, population, sampling process, and the validity and reliability of the MMSS instrument.

Research Method

A quantitative study with a correlational research design was done on the current research on job satisfaction of Hawaii critical care nurses. A quantitative study with correlational research design is useful in finding relationships among variables and describing a phenomenon (Cook & Cook, 2008). The 10 socio-demographics and the subscales of job satisfaction from the MMSS tool were the important variables of this study. A correlational research design does not include manipulation of any variables. An attempt was made to establish a relationship if any, among the three variables of this study and factual information was gathered that enabled testing of the hypotheses using a given population of Hawaii critical care nurses.

A theoretical framework of motivation influencing job satisfaction and thereby promoting nurse retention and patient safety, supports the purpose of this study. A relation may or may not have existed among the eight subscales of job satisfaction from the MMSS tool and the 10 nurse socio-demographics. The motivation of nurses in Hawaii may be influenced by specific conditions in the work setting of the critical care setting or personal demographics which in return could possibly impact overall job satisfaction.

Describing the relationships between the variables within the research problem forms the basis of the theoretical framework (Macnee & McCabe, 2008). A correlation

design presents facts on variables as they are and the relationship of one to the other. Correlation research uses inferential statistics to identify relationships between a given individual and two or more variables (Creswell, 2005). A relationship may or may not have existed for the current study.

The current research study used the quantitative method with a correlational research design based on multiple reasons. Research on nurse's job satisfaction is usually done using quantitative measures with the help of a survey (Leung et al., 2007). Surveys provide descriptive data (Cook & Cook, 2008).

The current research was done on critical care nurses using the MMSS tool (see Appendix B) with a 5-point Likert-type scale developed by Mueller and McCloskey (1990) to examine the level of job satisfaction among nurses currently practicing in critical care settings. A Likert-type scale was used in the MMSS instrument where a participant could agree or disagree to the 31 items to five varying degrees. The 5-point Likert-type scale values were *very dissatisfied, moderately dissatisfied, neither satisfied or dissatisfied, moderately satisfied, and very satisfied* (Mueller & McCloskey). As in a Likert-type scale, numbers are assigned to choices and the options allow a person to agree or disagree by choosing one response.

Socio-demographics were examined using a demographic profile (see Appendix A). This study included 10 socio-demographics. Gaining an understanding and finding the relationship between the independent and dependent variables was the main objective of the current study.

To understand the relationship between nurse job satisfaction and nurse socio-demographics in critical care nursing, a quantitative method with a correlational design

was chosen. An experimental approach was not chosen because no manipulation of the variables was done in the present study. The independent variables are manipulated in an experimental design whereas the 10 socio demographic variables in the present study were not being tested. A true experimental design allows for testing of a variable (Sarin, 2009).

The main purpose was to quantify the level of job satisfaction and explain the relationship that may or may not have existed between the 10 socio-demographics variables and the eight MMSS job satisfaction subscales among nurses currently working in the critical care settings. Several databases were reviewed to explore research studies and literature available on the problem of job dissatisfaction among nurses. Search terms used were: nurse job satisfaction, retention, motivation, nurse stress and burnout, critical care nursing, nurse shortage, nurse demographics, critical care nursing leadership, critical care education, and job dissatisfaction.

No studies on the relationship of the scales of job satisfaction from the MMSS tool to nurse socio-demographics were found specific for critical care nurses in the state of Hawaii within the databases reviewed. While several studies on job satisfaction of nurses exist, only a few discussed job satisfaction of critical care nurses in specific states of the U.S. Nursing practice and education is influenced by ongoing research in nursing (Tingen, Burnett, Murchison, & Haidong, 2007).

Appropriateness of Design

A quantitative method with a correlational design was appropriate for the purpose of this study which was to quantify the level of job satisfaction and explain the relationship that may or may not have existed between the 10 socio-demographics

variables and the eight MMSS job satisfaction subscales among part-time and full-time critical care nurses. According to Creswell (2005), a quantitative method with a correlational research design allows for testing of relationships between variables and measuring them. This design was chosen over others because this method has been used in past nursing research on job satisfaction both nationally (Letvak & Buck, 2008; Schmalenberg & Kramer, 2008; Walker, 2008; Zangaro & Johatgen, 2009; Wild et al., 2006) and globally ((Xu et al., 2008; Misener et al., 1996). The questionnaire used in this study provided a measure of job satisfaction for critical care nurses in Hawaii. A correlation was then done with variables of socio-demographics to the subscales of job satisfaction from the MMSS instrument.

The current research study aimed to determine if specific critical care nurse socio-demographics variables in Hawaii had any relationship to the eight dependent variables of job satisfaction subscales among nurses. A survey was done for this study. Surveys are included among other instruments used in correlation studies ((Sarin, 2009). This study aimed to draw inferences about Hawaii critical care nurses, using a purposive sample of 117 critical care nurses from three major hospitals to represent the population of critical care nurses in Hawaii. The two major hospitals chosen for this study were on the east of the island of Oahu in Hawaii and the third hospital was located on the west side of the island.

Quantitative studies help in making conclusions about a given population using samples of the same population. A qualitative approach is inadequate in developing relationships among the variables in a study (Creswell, 2005). A phenomenological study was considered but was not preferred due to possible participant discomfort in addressing

issues of job satisfaction. Researchers must watch for signs of discomfort and stress among participants during the data collection process and attention should remain on participant's safety and wellbeing (Walker, 2007). Content analysis was not considered for this study because content analysis has not been commonly used to study nurse job satisfaction in recent years as compared to correlation studies.

As in an experimental study, the variables for the present study were not influenced in any way. The 10 independent variables of nurse socio-demographics were left unchanged. Factual information was stated in the current study and a quantitative method with correlation research design helped in determining the relationship of the 10 nurse socio-demographics on the eight subscales of nurse job satisfaction obtained from the MMSS tool. The knowledge gained from this study added to the present body of knowledge on job satisfaction of nurses and the research design enabled the achievement of this study's purpose. As a result the quantitative method with a correlation design was more appropriate for this study.

Research Questions

1. What is the level of job satisfaction among critical care nurses in Hawaii?

2. What, if any, are the relationships of the 10 socio-demographics variables with the eight MMSS job satisfaction subscales for nurses currently working within critical care settings in Hawaii?

This study included 10 independent variables that were examined for their relationship on the eight job satisfaction scales of the MMSS instrument. The 10 independent variables were the socio-demographics (see Appendix A) of the nurses working in critical care settings in Hawaii that included: marital status, shift worked,

average hours worked per week, level of education, years of experience in critical care nursing and in current hospital, hours of work, cultural group, salary, and household income. The eight independent variables were the subscales of the MMSS instrument (see Appendix B) that included: "extrinsic rewards, scheduling, balance of family and work, coworkers, interaction opportunities, professional opportunities, praise and recognition, and work control and responsibility" (Tourangeau, et al., 2006, p. 129) specific to critical care nursing.

The 10 independent variables of nurse demographics were assessed using the socio-demographic form (see Appendix A). The eight dependent variables of job satisfaction scales were assessed using the MMSS tool seen in Appendix B (Mueller & McCloskey, 1990) with a 5-point Likert-type scale. The Likert-type scale responses ranged from 1 (*very dissatisfied*) to 5 (*very satisfied*). The eight dependent variables were the subscales of job satisfaction. Job satisfaction was determined using the subscales of job satisfaction from the MMSS tool to include: "extrinsic rewards, scheduling, balance of family and work, coworkers, interaction opportunities, professional opportunities, praise and recognition, and work control and responsibility" (Tourangeau, et al., 2006, p. 129).

Hypotheses

The hypothesis process includes a statement that clearly explains the expected outcomes of the research as predicted (Creswell, 2005). The hypothesis reflects on the purpose of the research. Excessive hypotheses have been avoided as it can result in losing sight of the main study (Cone & Foster, 2005). For the second research question the following null and alternative hypotheses were derived for this study based on the eight

subscales of the MMSS tool (see Appendix B) and the socio-demographic variables (see Appendix A).

The hypotheses addressed the 10 independent variables of socio-demographics to include: marital status, shift worked, average hours worked per week, level of education, years of experience in critical care nursing and in current hospital, hours of work, cultural group, salary, and household income. Based on the 10 independent variables of demographics, the hypotheses indicated the presence or absence of a relationship with the job satisfaction scales of the MMSS tool. The eight job satisfaction scales were the dependent variables for the current study, to include: "extrinsic rewards, scheduling, balance of family and work, coworkers, interaction opportunities, professional opportunities, praise and recognition, and work control and responsibility" (Tourangeau, et al., 2006, p. 129) specific to critical care nursing. The following were the eight hypotheses to address the second research question of the current study.

$H1_O$: The linear combination of the 10 socio-demographic variables will not predict the extrinsic rewards subscale score for nurses currently working within critical care settings in Hawaii.

$H1_A$: The linear combination of the 10 socio-demographic variables will predict the extrinsic rewards subscale score for nurses currently working within critical care settings in Hawaii.

$H2_O$: The linear combination of the 10 socio-demographic variables will not predict the scheduling subscale score for nurses currently working within critical care settings in Hawaii.

$H2_A$: The linear combination of the 10 socio-demographic variables will predict the scheduling subscale score for nurses currently working within critical care settings in Hawaii.

$H3_O$: The linear combination of the 10 socio-demographic variables will not predict the balance of family and work subscale score for nurses currently working within critical care settings in Hawaii.

$H3_A$: The linear combination of the 10 socio-demographic variables will predict the balance of family and work subscale score for nurses currently working within critical care settings in Hawaii.

$H4_O$: The linear combination of the 10 socio-demographic variables will not predict the coworkers subscale score for nurses currently working within critical care settings in Hawaii.

$H4_A$: The linear combination of the 10 socio-demographic variables will predict the coworkers subscale score for nurses currently working within critical care settings in Hawaii.

$H5_O$: The linear combination of the 10 socio-demographic variables will not predict the interaction opportunities subscale score for nurses currently working within critical care settings in Hawaii.

$H5_A$: The linear combination of the 10 socio-demographic variables will predict the interaction opportunities subscale score for nurses currently working within critical care settings in Hawaii.

$H6_o$: The linear combination of the 10 socio-demographic variables will not predict the professional opportunities subscale score for nurses currently working within critical care settings in Hawaii.

$H6_A$: The linear combination of the 10 socio-demographic variables will predict the professional opportunities subscale score for nurses currently working within critical care settings in Hawaii.

$H7_o$: The linear combination of the 10 socio-demographic variables will not predict the praise and recognition subscale score for nurses currently working within critical care settings in Hawaii.

$H7_A$: The linear combination of the 10 socio-demographic variables will predict the praise and recognition subscale score for nurses currently working within critical care settings in Hawaii.

$H8_o$: The linear combination of the 10 socio-demographic variables will not predict the work control and responsibility subscale score for nurses currently working within critical care settings in Hawaii.

$H8_A$: The linear combination of the 10 socio-demographic variables will predict the work control and responsibility subscale score for nurses currently working within critical care settings in Hawaii.

Population

The target population for the current study on job satisfaction included critical care registered nurses. The population of RNs in Hawaii was estimated to be 4,986 (HCSN, 2008). Out of the estimated number of RNs in Hawaii a minimum of 62 % of nurses work in acute care settings which is approximately 3091 nurses (HSCN).

According to the American Association of Critical Care Nurses (2008) 37% of the hospital nurses work in critical care settings. Based on the estimate from the American Association of Critical Care Nurses, the population of Hawaii critical care RNs can be estimated to be 37% of 3,091 nurses which is approximately 1,144 nurses. In the databases reviewed, no information could be found on the exact number of critical care registered nurses working exclusively in the ER and/or ICU or on the actual years of experience for these nurses in Hawaii.

Out of the population of critical care nurses in Hawaii a sample of 117 nurses was chosen for the current study. A representative sample was used from among currently practicing registered nurses in a critical care unit in Hawaii with a minimum of six months of direct patient care experience in critical care nursing in the state of Hawaii. All other critical care nurses who were currently not involved in direct patient care: faculty, supervisors, administrators, managers, educators, and clinical nurse specialists were excluded from this study, because job satisfaction varied depending on different work conditions. Educators who currently practiced bedside nursing in the critical care unit were allowed to participate in this study.

The sample for this study included a group of critical care nurses in Hawaii that would represent all critical care nurses in Hawaii. A purposive sample of a minimum of 117 critical care nurses who were available on the day of data collection at the chosen hospitals were used for this study without regard to gender, age, or any specific background. A purposive sample from these hospitals was useful in representing the entire population rather than a random or a convenient sample.

The sample included Hawaii critical care registered nurses who volunteered to participate in this study on the day selected for data collection. Nurse participants were currently practicing as part-time or full-time nurses in direct patient care within critical care units and with at least six months of experience in critical care nursing. The sample excluded all other registered nurses who did not fall in the criteria specified and required for this study.

Sampling Frame

Purposive sampling allowed participants to participate voluntarily in the current study as long as they met the required criteria for the current study. Registered nurse participants were employed at least full-time or part-time for a minimum of six months in a critical care unit of an acute care hospital in Hawaii. The samples were chosen from three major medical centers in Hawaii.

The three hospitals are identified as Medical Center X, Medical Center Y and Medical Center Z, to maintain confidentiality as directed by these medical centers. A letter of introduction (see Appendix C) and an informed consent (see Appendix D) were provided to each participant at the three medical centers (see Appendix D). Critical care nurses working as clinical nurse specialists, managers, on call agency nurses, educators, nurse practitioners, administrators, and supervisors were excluded from this study because the benefits and job descriptions for these nurses would vary and could have affected their job satisfaction. This study was specific to direct patient care registered nurses in critical care nursing in Hawaii. The MMSS questionnaire along with the socio-demographic data form was provided to the nurse managers for review.

A data collection day was set and the hospitals were made aware of the exact day. The sample included a minimum of 117 nurses from the available critical care nurses working on the day chosen for this study. The determination of the adequate sample size for the regression models was calculated using a formula recommended by Tabachnick and Fidell (2001). The following formula: "sample size = 104+ *m*" (Tabachnick & Fidell, p. 117) was used to select the number of participants. In the formula the letter *m* equals the number of independent variables.

The independent variables for the current study were the 10 socio-demographic variables (see Appendix A). Given the formula the anticipated sample size for this study was 114 (104 + 10 independent variables). The purposive sampling method is a non-probability sampling process. The sample met the criteria and purpose required by the current study. Good samples promote generalization of a given study, stated Neuman (2003).

An adequate number of participants reduced the bias in selection of participants. Samples size may vary depending on the research study. A minimum sample of 114 was considered statistically reasonable based on the model presented by Tabachnick and Fidell (2001) for the present study. As a result a sample of 117 participants was adequate for this study.

The participants for the current study included emergency room and intensive care unit nurses from two different shifts. Each hospital chosen for the present study had an emergency room. The sample included nurses from a total of three emergency rooms and five intensive care units from the three hospitals under study. The intensive care units were divided based on specialty at medical center Z. The specialties in critical care

nursing at medical center Y included: neuro-trauma, medical, and surgical ICU. Medical centers X and Y have a general ICU that included all types of intensive care patients.

Informed Consent

Each participant was provided a letter explaining details of this study (see Appendix C). The participants for this study were given a copy of an informed consent form (see Appendix D) at the three hospitals. The consent included the name of the researcher, the purpose, benefits and process of the researcher, assurance of confidentiality and risk free nature of this study, and detailed explanation clarifying that signing the consent form was considered participant's permission to participate in this study. As requested by Medical Center Z, an additional form for participants (see Appendix E) was used exclusively for this hospital, to provide contact information to the hospital's research committee for any concerns. A letter of introduction was included for participants from all three medical centers (see Appendix C).

An informed consent form required a signature from the participant acknowledging acceptance to participate in this study. Signatures were required from participants in order to understand specific details of participation. A copy of the consent form (Appendix D) was given prior to completing the survey. Once the consent form was signed the participant completed the survey anonymously. Consent forms were not connected to the surveys but were filed separately.

Confidentiality

Each participant of this study was given a copy of the demographic form and the MMSS tool. Names, ages, or identifiers were not used in the questionnaire to promote maximum participation from the participants. Names of participants were not linked to

specific numbers. Information from each participant was kept confidential and was not used in any form to cause a break in confidentiality. Personal identifiers to distinguish responses did not exist to in any form on either the MMSS tool or the socio-demographic form. All data collected remained anonymous and was shared with only those involved in this study.

Data was evaluated together to represent Hawaii critical care nurses and not a particular registered nurse in critical care nursing at a specific hospital. Results presented did not identify any particular individual. Consent forms and the data collected were stored in a metal file cabinet and locked for security in a private home office.

Pertinent information on the Appendices for this study has been blocked to maintain confidentiality of the medical centers involved in the study. Data will be permanently destroyed after three years of completion of this study. Results of this study may be used in conferences or presentations. After completion of this study the results of the data may be submitted for publication. Hospitals participating in the study will be informed of the study results and made aware of publication.

Geographic Location

This study was conducted in the state of Hawaii on the island of Oahu. Three major medical centers were chosen for this study. The hospitals were located in East and West of Honolulu. The three hospitals had critical care nurses in specialty areas that included: the cardiac care unit, medical intensive care unit, trauma/neuro intensive care unit, surgical intensive care, and the emergency room. Such a variety of critical care areas provided the needed sample for this study.

The different critical care units chosen for this study ensured common types of critical care settings in a hospital were addressed. The hospitals were chosen based on the broad specialty areas in critical care provided and the location. The nurses in Hawaii have varying socio-demographics on the island of Oahu (HCN, 2008), including nurses in the chosen hospitals. No studies on job satisfaction of critical care nurses on the island of Oahu were found in the databases reviewed for the present study.

Data Collection

A total of five medical centers were approached for the current study and only three were actually used. For confidentiality reasons the names of the two medical centers that declined participation is kept confidential. Although every effort was made, Internal Review Board approval could not be obtained at these two medical centers. One medical center claimed via email that the questions in the MMSS instrument were too sensitive while the other medical center indicated lack of interest because job satisfaction surveys for nurses were conducted routinely by the hospital.

The three hospitals included in this study were contacted and the Institutional Review Board (IRB) process as designed by the individual healthcare organization was completed. A demographic profile (Appendix A) and the MMSS instrument (Appendix B) were used for this quantitative study with a correlation design on job satisfaction among critical care nurses. Unit managers at the hospitals received a copy of the instrument and were given details of this study.

The Medical Center Z had a detailed lengthy IRB process and any changes made to this study had to go through the review board for approval. The entire process took approximately five months to receive approval because of several requirements of the

healthcare organization. Details on the additional Allied Health approval form given by Medical Center Z are shown in Appendix F.

Allied Health approval was not required by Medical Center X or Medical Center Y. Permission to use the premises (See Appendices G1, G2 & G3) and letters of collaboration (see Appendices H1, H2 & H3) was obtained. At Medical Center Z, permission to use premises (see Appendix G3) and a letter of collaboration (see Appendix H3) permitted this study to be conducted on the medical ICU, surgical ICU, neuro-trauma ICU, and the ER.

In comparison, the research review process for Medical Center X and Medical Center Y were brief and permission to use premises (see Appendix G1 & Appendix G2) along with letters of collaboration (see Appendix H1 & Appendix H2) to conduct this study in the ICU and the ER were obtained. The unit managers of these hospitals were contacted with details of this study. A copy of the instrument and details of this study were provided.

A day was chosen for this study and the unit managers at the three hospitals were informed about the exact time. Meetings were held with the research team at the hospital as needed. Once the unit managers approved the date and time of this study, the data was collected.

All available nurses present on the day of this study were reviewed with the nurse manager to ensure eligibility to participate in this study. With the assistance of the nurse manager and charge nurses' participants were directed to the nurse's lounge of the unit. The time chosen for this study was during the lunch and dinner hour on the day of this study.

The letter of introduction, consent forms, and data collection tools were placed in the nurse's lounge of the unit. Using purposive sampling, the charge nurses provided a list of nurses who met the criteria for this study on the chosen day. A lunch and dinner hour of the nurses was chosen and a meal was provided to participants of this study. The entire data collection tools were then distributed among registered nurses on the intensive care unit and ER on the day selected.

Each participant for this study was given a letter of introduction (see Appendix C), an informed consent (see Appendix D), a demographic profile form (see Appendix A) and the MMSS questionnaire (Appendix B). As per the requirement of one of the hospitals for this study, an extra information sheet (see Appendix E) was used, which also contained the phone number and address of the research committee of the hospital. This sheet allowed an option for employees to contact the hospital research committee for any issues that may have risen from this study.

When the nurses voluntarily came to the nurse's lounge to complete the survey during the time agreed by the managers of the units they were allowed to read the letter of introduction, the consent form, and the survey tool. For Medical Center Z students were given time to read the information sheet as was provided. Participants were encouraged to ask questions and concerns. No questions were asked. The participants signed the consent form and turned it in. Consent forms were picked up immediately and kept securely and separately from the completed surveys.

A large sealed box was placed on the units for nurses to drop off completed survey forms. No identifiers were used to connect responses to any specific nurse. Only those nurses who met the sample criteria were allowed to complete the questionnaires.

The nurses willingly placed completed surveys in a large sealed box placed in the lounge and picked up the free meal provided.

Questions to research study were encouraged with assurance that they would be answered as needed on the day of the study. This study was conducted in the nurse's lounge of the critical care unit. The letter of introduction and informed consent provided explanation on voluntary participation. If any participant would have decided to withdraw before this study was completed, the individual would have been allowed to leave the nurse's lounge without any questions. After beginning the study, if the participant would have decided not to complete this study then the freedom to leave without any questioning was provided.

None of the participants left half way through completing of the survey. Rounds were made to each nurse's lounge of the critical care unit on the day of this study. A cell phone number was provided to the unit manager and was also placed in the lounge in case participants had any questions. The participants had access to immediate help by calling the cell phone number provided.

All incomplete and complete surveys were placed in a locked home office cabinet and will be stored for three years after completion of this study. All data and surveys will be destroyed by permanent means after three years. No names or identification of those that did not complete this study or voluntary withdrew from the study were provided to anyone. Information on voluntary withdrawing participants was kept confidential.

Emailing of surveys was not done because it would be difficult acquiring the email IDs of each participant and the number of returned surveys could be low. Mailing the questionnaires would have probably resulted in fewer responses being returned.

Following this study, the contact information was provided to all the unit managers of the critical care units. Contact information included phone number and email address.

The box with the completed surveys was picked up on the same day of data collection and survey data was added to a Microsoft Excel spreadsheet database. Content was reviewed for accuracy and completions. All consent forms and completed surveys were stored in a locked cabinet at a home office and no one will be given access to individual surveys at any time.

Instrumentation

The MMSS tool (see Appendix B) by Mueller and McCloskey (1990) was used for this study. The tool has eight subscales and a total of 31 questions with a 5-point scale. The responses were recorded on the 5-point Likert-type scale with range of 1 (*very dissatisfied*) to 5 (*very satisfied*).

The eight subscales of satisfaction from the MMSS tool were intended to capture the following aspects of work related to job satisfaction: "extrinsic rewards, scheduling, balance of family and work, coworkers, interaction opportunities, professional opportunities, praise and recognition, and work control and responsibility" (Tourangeau, et al., 2006, p. 129). The eight subscales are further divided in terms of motivation into three main categories: safety, social rewards, and psychological rewards. The safety rewards include "extrinsic rewards, scheduling, and balance of family and work" (Tourangeau, et al., p. 129) while "coworkers and interaction opportunities" (Tourangeau, et al., p. 129) relate to social rewards that promote satisfaction. "Professional opportunities, praise and recognition, and work control and responsibility" (Tourangeau, et al., p. 129) signify psychological rewards of job satisfaction. Safety,

social, and psychological rewards premised on Herzberg and Maslow's theory of motivation identified the level and motivators of job satisfaction for nurses.

Prior to filling out the MMSS questionnaire, the participant answered a few questions on socio-demographics (see Appendix A). Job satisfaction attributes were then identified from questions 1-31; on the MMSS scale, as given in Appendix B. The subscales of job satisfaction on the MMSS tool were distributed in the following manner: extrinsic rewards included items 1-3, scheduling included items from 4-6 and 8-10; balance of family and work included items 7, 11, 12; coworkers included items 14 and 15; interaction and scheduling included items 16-19; professional opportunities included items 20-21 and 27-28; praise and recognition included items 13 and 24-26; and finally control and responsibility included items 22, 23 and 29-31.

The nurse participant reviewed the eight attributes of job satisfaction and indicated the level of job satisfaction using the 5-point Likert-type scale. The responses were recorded on the 5-point Likert-type scale with a range of 1 (*very dissatisfied*) to 5 (*very satisfied*). Each attribute yielded a score depending on the number of items.

Other instruments for measuring job satisfaction such as the Minnesota Satisfaction Questionnaire (MSQ), Index of Job Satisfaction and the Job Satisfaction Survey were too general and not specific to nursing. The two most popular instruments used to study nursing job satisfaction included the Index of Work Satisfaction (IWS) and the MMSS. The IWS includes 48 questions and takes 45 minutes to complete (Nathenson, Schafer & Anderson, 2007). Compared to the IWS, the MMSS tool is user friendly.

Repeated successful studies increase reliability of a tool. Tourangeau, et al. (2006) indicated the popularity of use of the MMSS tool to measure job satisfaction in nursing research and actual practice. Studies done by Altier and Krsek (2006), and Davies et al. (2006) indicated the effectiveness of the MMSS instrument in the U.S. The MMSS tool has been used effectively in Hong Kong (Leung et al., 2007.) and for Arabic nurses (Misener et al., 1996). The global use of the instrument used in this study is evident.

The MMSS tool was considered most appropriate for the current research because the questionnaire helped identify the level and motivating factors of job satisfaction among critical care nurses in the critical care setting within a hospital. One of the few instruments to measure job satisfaction among nurses includes the MMSS tool. The MMSS instrument was specifically designed for the assessment of job satisfaction among nurses working in a hospital setting (Mueller & McCloskey 1990). The MMSS tool helped to evaluate the dependent variables of job satisfaction subscales among nurses. The permission to use the tool is shown in Appendix I.

Initially, the MMSS tool developed in 1974 had three subscales of rewards: safety, social, and psychological (Mueller & McCloskey, 1990). Face and content validity was reported on previous scales along with test re-test and alpha reliability (Mueller & McCloskey). The newer version developed by Mueller and McCloskey in 1990 have eight subscales of job satisfaction. The new scales were supported and confirmed by factor analysis to indicate the MMSS tool is a valid measurement tool for job satisfaction.

The 1990 model scales included the original three subscales and is based on Maslow's (1954) theoretical framework of motivation (Mueller & McCloskey, 1990). A demographic profile (see Appendix A) was created to go along with the MMSS tool to evaluate the 10 independent variables that included: marital status, shift worked, average hours worked in a week, highest level of education, years of experience in critical care, years of experience in current hospital, area of work, cultural group, salary range, and household income. Choices were provided for each of the socio-demographics.

Validity and Reliability

Internal and External Validity

Validity is the goal of all research methods. To maintain validity of any research the method must be appropriate for construction of new knowledge. The validity of the MMSS has been obtained through construct and criterion-related validity (Mueller & McCloskey, 1990). Global generalization of the results of a research requires sound and valid methodology.

Cronbach alpha coefficient of 0.89 was calculated as the global job satisfaction indicator by adding all the 31 items of the MMSS scale (Mueller & McCloskey, 1990). Mueller and McCloskey performed confirmatory factor analysis of the previous version of the MMSS tool consisting of three subscales. The actual content and the number of questions in the subscales were tested using the exploratory factor analysis, resulting in the formation of eight subscales for the MMSS. Oblique rotation along with maximum likelihood common factor analysis was also used, informs Mueller and McCloskey.

Subscales of the MMSS were correlated with different variables of job satisfaction for nurses as well. The subscales were tested for correlation to other variables

such as autonomy, intent to stay, and task variety (Mueller & McCloskey, 1990). The findings of moderate correlations indicated construct validity (Mueller & McCloskey).

The MMSS tool has demonstrated criterion and construct validity with the findings of moderate positive correlations with other scales for all expected relationships (Mueller & McCloskey, 1990). Criterion validity of the MMSS was developed by comparing the scale to popular instruments: the Bayfield Roth Satisfaction Scale and the Hackman and Oldham's Job Diagnostic Survey (Mueller & McCloskey). Positive correlations were found that varied anywhere from 0.53 to 0.75, reported Mueller and McCloskey. The MMSS tool has been proven to be a valid measurement tool of nursing job satisfaction because the correlations for similar dimensions ranged from 0.53 to 0.75 and the overall score was 0.56 (Mueller & McCloskey). As a result, the MMSS tool may be a more valid tool specifically for nurse job satisfaction studies.

To promote external validity, the current study used a variety of specialized critical care settings and three emergency rooms from different hospital settings. The sample included nurses without regard to age, sex, or culture, and who were full-time and part-time employees working different shifts. Nurses were chosen from the east and west part of the island of Oahu. The external validity is determined by the capability of generalizing the results of a given study (Creswell, 2005). A similar study as the present one may be done in the future at another geographic location within other critical care units.

Reliability

Reliability refers to an instrument of data collection that does what it was intended to do for a particular research study (Creswell, 2005). Replication of observation

explains the process of observing and re-observing the same situations for the same treatment level or for similar levels of treatments. The observations when replicated provide information on better reliability.

The internal reliability of the MMSS tool was determined using Cronbach's alpha for each of the eight subscales of job satisfaction (Mueller & McCloskey, 1990). The alpha coefficient for the global scale was 0.89, and established reliability coefficients range from 0.52 to 0.84 for the eight subscales (Mueller & McCloskey). The alphas are smaller for the subscales of job satisfaction that have fewer items (Mueller & McCloskey) and scores on the MMSS instrument can range from 31 to 155. The summed score on a global scale level can be obtained and higher scores provide data on greater nurse job satisfaction. Actual tests and re-test correlations taken at a six month and 12 month level of experiences revealed same or lower level alphas indicating consistency of results.

The current study used a reliable instrument because the MMSS tool has been used for several quantitative correlation studies across cultures on job satisfaction and has brought similar results (Davies et al., 2006; Leung et al., 2007). The validity and the reliability of the MMSS tool have been shown from various tests and re-tests done (McCloskey & Mueller, 1990). The MMSS instrument is valid and reliable based on these findings.

Data Analysis

Data analysis was done using descriptive and inferential statistics. Only completely filled questionnaires were included in this study. Incomplete questionnaires were filed in a locked cabinet. The data collected was entered on a Microsoft Excel 2003

sheet. The statistician involved in the data analysis of this study completed an Informed Consent Form (see Appendix J)

The Statistical Package for the Social Sciences (SPSS) Graduate Version 15.0 (SPSS, Inc. 2006) was used for the analysis of all the data collected for this study on job satisfaction of critical care nurses. Inferential statistics helped to address the two research questions identified in this study. A brief analysis of the data for each individual research question provided clarification on the process used for the current study.

Research Question One

Past studies have successfully used the MMSS tool in measuring the level of job satisfaction among nurses (Altier & Krsek, 2006; Leung et al., 2007). As a result the MMSS tool was adequate in measuring overall level of job satisfaction among the critical care nurses in Hawaii. Purposive sampling for this study included non randomization of participants. The samples chosen provided data that may be used to make generalizations. To find out the level of job satisfaction among critical care nurses in Hawaii, descriptive statistics on the 10 MMSS subscales was calculated.

The MMSS uses a 5-point Likert-type scale (Mueller & McCloskey, 1990). The scale for the MMSS instrument meets the criteria designed for a Likert-type scale, indicates Mueller and McCloskey. A Likert-type scale works as a supplement to a survey tool in finding information on social attitudes to a given act, idea, or towards a person (Likert, et al., 1993). According to Likert et al., the responses recorded on the 5-point Likert-type scale range from 1 (*very dissatisfied*) to 5 (*very satisfied*). Based on the Mueller and McCloskey's (1990) scoring procedure, the 31 items on the MMSS scale measure job satisfaction and are aggregated into eight interval-level subscales.

For research question one, an overall mean of the global scale was used to find the level of job satisfaction among critical care nurses in Hawaii. A mean nurse job satisfaction score was calculated by summing the total score and dividing it by 31. The total items on the questionnaire are 31, the lowest score is 31, highest is 155 and the midpoint is 93. The score can range from 31 to 155 and a higher score indicates higher job satisfaction (Mueller & McCloskey, 1990).

Individual job satisfaction subscale scores were presented with Likert mean values. Mueller and McCloskey (1990) did not specify a cut point in the scores that predict job satisfaction. Each item on the MMSS tool is ranked on a 5-point Likert-type scale. A score of 1 is used for highly satisfied whereas a score of 5 is used for highly dissatisfied (Likert et al., 1993). If a score of 3 on the Likert-type scale is taken as the neutral point as done in a previous study (Leung et al., 2007), a score above 3.0 indicates moderate job satisfaction among critical care nurses whereas a score above 4.0 indicates a higher job satisfaction level. The Likert score for each subscale is presented along with an overall Likert score for all subscales.

Research Question Two

The primary dependent variables for this study were the eight MMSS subscales. A series of 10 demographic independent variables were gathered for each critical care nurse to include: marital status, shift worked, average hours worked per week, highest level of education, years of experience as a critical care nurse, years of experience in the current hospital, areas of work, cultural group, salary, and finally household income. The eight subscales as they correspond to the 31 items of the MMSS instrument (see Appendix B) are listed in table 1.

Table 1

Job Satisfaction Subscales from MMSS

Eight Job Satisfaction Subscale from MMSS	Distribution of the 31 MMSS items
Extrinsic Rewards	1, 2, 3
Scheduling	4, 5, 6, 8, 9, 10
Balance of Family and Work	7, 11, 12
Coworkers	14, 15
Interaction Opportunities	16, 17, 18, 19
Professional Opportunities	20, 26, 27
Praise and Recognition	13, 23, 24, 25.
Control and responsibility	21, 22, 28, 29, 30, 31

The combinations of the 10 demographic variables were used to predict each of the eight MMSS job satisfaction subscales. Due to the exploratory nature of this study, all analyses were performed using two tailed tests of significance. Alpha level for this study was set at < .05. Due to the exploratory nature of this study findings significant at the $p < .10$ level were noted to suggest avenues for future research.

Data were initially tabulated using standard summary statistics such as means, standard deviations, frequencies and percentages. Multiple regression prediction equations were created to test the hypotheses. The multiple regression method was used to test hypotheses because the main purpose of using multiple regressions in research is to learn and understand more about relationships in a study involving multiple independent variables. This study had 10 independent variables, indicating the use of

multiple independent variables in the current correlational study. A Spearman Rho form of analysis was not used for the current study because the MMSS tool has interval level variables.

The multiple regression method is commonly used in research studies where one wants to find the best predictions and analysis between multiple variables (Creswell, 2005). Depending on the data obtained, data analysis of the linear combination of the 10 socio-demographics using multiple regressions may or may not show significant predictions of the subscales of the job satisfaction outlined in the MMSS tool. The regression analysis for the current study helped to understand which of the 10 socio-demographics were significantly related to the subscales of job satisfaction among critical care nurses in Hawaii. The socio-demographic predictors of job satisfaction subscales in the current study were linearly independent, as is required in multiple regression analysis (Creswell).

The MMSS tool (see Appendix B) yields eight interval level subscales. Eight hypotheses were used to address the second research question. Each of the eight hypotheses was tested individually. Table 2 provides details on the hypotheses testing for this study.

Table 2

Hypotheses Testing

Alternate Hypotheses Paraphrased	Data Elements	Statistical Test
The 10 socio-demographic variables predict the extrinsic rewards subscale.	The 10 Socio-Demographic variables	Multiple Regression
The 10 socio-demographic variables predict the scheduling rewards subscale.	The 10 Socio-Demographic variables	Multiple Regression
The 10 socio-demographic variables predict the family and work balance subscale.	The 10 Socio-Demographic variables	Multiple Regression
The 10 socio-demographic variables predict the coworkers rewards subscale.	The 10 Socio-Demographic variables	Multiple Regression
The 10 socio-demographic variables predict the interaction opportunities subscale.	The 10 Socio-Demographic variables	Multiple Regression
The 10 socio-demographic variables predict the professional opportunities subscale.	The 10 Socio-Demographic variables	Multiple Regression
The 10 socio-demographic variables predict the praise and recognition subscale.	The 10 Socio-Demographic variables	Multiple Regression
The 10 socio-demographic variables predict the work control and responsibility subscale.	The 10 Socio-Demographic variables	Multiple Regression

Summary

Chapter 3 provided details and justification of the research design, data collection method, and data analysis planned for the current correlation study on job satisfaction of critical care nurses in Hawaii. A purposive sample of 117 critical care nurses with a

minimum of six months of clinical experience was chosen for this study. A demographic profile (Appendix A) and the MMSS instrument (Appendix B) were used for the current study. The MMSS tool used is valid and reliable in measuring the job satisfaction of critical care nurses in a hospital setting (Mueller & McCloskey 1990; Tourangeau, et al., 2006) and has documented success in past studies (Altier & Krsek, 2006; Davies et al., 2006; Leung et al., 2007). A quantitative study with a correlational research design met the purpose of this study on critical care nurses in Hawaii.

This study can be replicated for a similar setting in other critical care settings. The results of this study may be generalized to other critical care nurses with similar socio-demographics. Chapter 4 includes actual research findings of the research study on critical care nurses in Hawaii. The results obtained were accurately reported. The data obtained from Hawaii critical care nurses is reflected in Chapter 4.

CHAPTER 4: RESULTS

The purpose of chapter 4 is to report the results of this correlational study on job satisfaction of critical care nurses in Hawaii. The nurse shortage in the U.S. (AACN, 2009a) and in the state of Hawaii is expected to worsen (Le Vasseur, 2008). Nurses working in critical care areas are in high demand (American Association of Critical Care Nurses, 2008a) and their shortage impacts patient safety (Garrett, 2008, Kane, et al., 2007, Ruggiero, 2005). Hawaii, a geographically distant state in the U.S., is highly dependent on existing Hawaii critical care nurses for the care of critically ill patients who require specialized care. Because the demand for critical care nurses in Hawaii is growing (HSCN, 2008), retaining existing critical care nurses is essential to prevent further shortage in Hawaii and promote safe patient care.

Research on job satisfaction (Cummings et al., 2008; HSCN, 2008; Sellgren et al., 2008) and retention issues among nurses (Davies, 2008; Poter-Wenzlaff, & Froman, 2008) was evident, but among the databases reviewed there was no research found on job satisfaction specific to critical care nurses in Hawaii relating to work settings and nurse socio-demographics. Chapter 4 includes the purpose of this study, data collection process, instrument analysis, data analysis procedure, and the findings of this study.

Data Collection

The purpose of this quantitative study with a correlation research design was to quantify the level of job satisfaction and explain the relationship between the 10 socio-demographics variables and the eight subscales of job satisfaction from the MMSS, among part-time and full-time nurses currently working in the critical care settings of the emergency room or intensive care unit and employed on the island of Oahu, Hawaii. The

relationship was examined using the socio-demographic form and the MMSS tool. The data collected provided a descriptive and a quantitative correlational approach. The determinants of job satisfaction were sorted into 8 subscales using the 31 items of the MMSS tool (Mueller & McCloskey, 1990).

The population targeted by the current study included critical care nurses in the state of Hawaii. A sample size of 117 critical care nurses was included from three major medical centers in Hawaii. Permissions were obtained from the three health care organizations and the Internal Review Board process was completed. The sample included critical care nursing working in the ER and the ICU. The critical care nurses ranged from different specialty ICU units to include: neuro-trauma, medical, surgical, and cardiac ICU. A total of 119 nurses participated in this study, 2 of whom were deleted because the socio-demographic form was left blank.

Following approval from the Internal Review Board at University of Phoenix, the critical care unit managers were contacted from all three hospitals chosen for this study to decide on a date for data collection. Copies of the survey tool were presented prior to data collection for review. A mutually agreed upon date and time was set with the unit managers to collect data from the critical care nurses at the various critical care units of the hospitals. The ICU and ER nurse-managers approved the use of the nurse's lounge for data collection.

A pilot study was not done because the MMSS has documented reliability and validity as discussed in Chapter 1 and 2 (Mueller & McCloskey, 1990). The MMSS is a tool developed to study job satisfaction among nurses. The MMSS uses a 5-point Likert-

type scale for 31 questions on nurse's job satisfaction. The questions were further divided into eight subscales of job satisfaction (see Table 1).

On the day of data collection to encourage nurses in voluntarily participating in this study, the nurse managers and charge nurses assisted in directing the part-time and full-time critical care RNs who had at least six months of experience with direct patient care in critical care nursing. The critical care RNs came to the nurse's lounge during the lunch or dinner break. Verification of the sample criteria for each nurse was done through the nurse managers working on the unit and with the participant. A meal was provided to the critical care nurses for participating in this study.

The letter explaining the details of this study (see Appendix C), the informed consent (see Appendix D), the socio-demographic form (see Appendix A), and the MMSS tool (see Appendix B), were handed to the nurses. Assurance on confidentiality was provided to all critical care nurses. As required by Medical Center Z, an additional information sheet (Appendix E) was provided to the RNs at this medical center.

Addressing of concerns and questions was done after greeting the nurses. The nurses did not ask any questions and after reading the information sheet, they voluntarily agreed to participate in the study. High patient acuity on some critical care units on the day of data collection made it difficult for all nurses to participate in the study during the lunch or dinner hour.

After the participating critical care nurses signed the consent form, they voluntarily completed the survey and dropped it into the sealed box. Absence of identifiers on surveys reduced any chance of linking surveys to particular participants. Filing of consent forms separately from surveys also decreased any possibility of linking

consents to individual surveys. Participants dropped the completed surveys in the locked box placed in the nurse's lounge.

The entire data collection lasted for two weeks and was done on different days for the three medical centers. On the day of this study, at the end of each lunch or dinner period, the completed surveys were picked up and the data was immediately added to an Excel spreadsheet. The completed surveys were stored in a locked home office cabinet.

Two nurses did not complete the socio-demographic form and were not included in this study. Two other nurses hired from an outside agency and a few nurses with a per-diem status at the chosen hospitals agreed to participate in this study. These nurses were excluded from the study because they did not work as part-time or full-time nurses for the chosen hospitals, and did not meet the sampling criteria. The two incomplete surveys were filed in a locked cabinet along with the other completed surveys.

The Microsoft Excel software spreadsheet database became the first place of entry for data obtained from the socio-demographic form and the MMSS tool. Information from each participant placed directly on the spreadsheet created an organized sheet of data. Based on the order of data entry, each participant had a unique number assigned. The Statistical Package for the Social Sciences (SPSS) Graduate Version 15.0 (SPSS, Inc. 2006) analyzed data obtained for this study. Inferential statistics was used for analysis of data.

Instrument Analysis

The MMSS was easy to use and participants took fewer than 15 minutes to complete the form. Each of the 31 items of the MMSS tool was linked to a different subscale of nurse job satisfaction (Mueller & McCloskey, 1990). The instrument

measured job satisfaction for eight subscales of the MMSS: “extrinsic rewards, scheduling, balance of family and work, coworkers, interaction opportunities, professional opportunities, praise and recognition, and finally control and responsibility” (Tourangeau, et al., 2006, p. 129). When averaged, the subscale scores relative to job satisfaction of critical care nurses indicated areas most relevant to job satisfaction.

A series of 10 independent socio-demographic variables were gathered for each critical care nurse to include: marital status, shift worked, average hours worked per week, highest level of education, years of experience as a critical care nurse, years of experience in the current hospital, areas of work, cultural group, salary, finally household income. The combination of the 10 socio-demographic variables was used to predict each of the 8 MMSS job satisfaction subscales. Individual scoring on each of the 31 item MMSS tool resulted in a score ranging from 1 to 5 on a Likert-type scale. The total score ranged from 31 to 155 and a higher score indicated higher job satisfaction (Mueller & McCloskey, 1990) that addressed the first research question.

The MMSS tool (see Appendix B) yielded eight interval level subscales. Eight hypotheses were used to address the second research question. Each of the eight hypotheses was tested individually. The socio-demographic predictors of job satisfaction subscales in the proposed study are linearly independent, as is required in multiple regression analysis, according to Creswell (2005).

The data analysis of the linear combination of the 10 socio-demographics using multiple regressions in the current study assisted in showing significant predictions of the subscales of job satisfaction outlined in the MMSS tool. The regression analysis for this study helped to understand which of the 10 socio-demographics were significantly related

to the subscales of job satisfaction among critical care nurses in Hawaii. The determination of an existent relationship provides guidance to the leadership of nurse managers, educators, and administrators, in relation to critical care nursing.

Demographics of Participants

Table 3 displays the frequency counts for selected variables. A total of 117 nurses participated in this study from three different hospitals: Medical Center X, Medical Center Y, and Medical Center Z. A total of 32 nurses participated from Hospital X, 35 nurses from Hospital Y and 50 nurses from Hospital Z. Out of the total percentage of nurses, 32.2% were single, 59.0% were married, 6.0% were either divorced or separated and 0.9% of the nurses were widowed.

A majority of the nurses (36.8%) worked a rotating shift, followed by those who worked: only the night shift (29.9%), only the day shift (28.2%), and only the evening shift (5.1%). Hours of weekly work ranged from less than 10 to more than 40 with a median of 35 hours per week. Data revealed 58% of nurses had at least a bachelor's degree in nursing and 5.1% had earned a Master's degree. The total years of experience working as a critical care nurse ranged from less than 5 years to a range of 20 to 45 years with a median of 7 years. The number of years at the current hospital ranged from less than 5 years to a range of 20 to 30 years with a median of 7 years.

A majority of the nurses who participated in this study were working solely in the ICU (46.2%), followed by nurses working mainly in the ER (38.5%). The most common ethnic group of nurses was Asians (55.6%). Personal income ranged from under $50,000 to over $150,000 with a median income of $87,500. Household income also had the

same ranges of under $50,000 to over $150,000 with the median income of $125,000 (Table 3).

Table 3

Frequency Counts for Selected Variables (N = 117)

Variable	Category	*n*	%
Hospital	X	32	27.4
	Y	35	29.9
	Z	50	42.7
Marital Status	Single	40	32.2
	Married	69	59.0
	Separated/Divorced	7	6.0
	Widowed	1	0.9
Shift Worked	Day only	33	28.2
	Evening only	6	5.1
	Night only	35	29.9
	Rotating	43	36.8

Table 3 *Continued*

Table 3 *Continued*

Variable	Category	*n*	%
Average Hours per Week	Under 10 hours	2	1.7
	10-20 hours	3	2.6
	21-30 hours	9	7.7
	31-39 hours	86	73.5
	Over 40 hours	17	14.5
Highest Level of Education	Diploma	1	0.9
	AA in Nursing	23	9.7
	BS in Nursing	68	58.1
	BA/BS in Other	13	11.1
	MS in Nursing	6	5.1
	MA/MS in Other	6	5.1
Years as Critical Care RN	0-4	47	40.2
	5-9	27	23.1
	10-19	25	21.4
	20-45	18	15.4

Table 3 *Continued*

Variable	Category	*n*	%
Years at Current Hospital	0-4	43	36.8
	5-9	39	33.3
	10-19	27	23.1
	20-30	6	5.1
Area of Work	ER	45	38.5
	ICU	54	46.2
	CCU	6	5.1
	Crisis	3	2.6
	Multiple areas	9	7.7
Cultural Group	Asian	65	55.6
	African-American	2	1.7
	Caucasian	32	27.4
	Native Hawaiian/ Pacific Islander	6	5.1
	Two or more races	10	8.5
	Hispanic or Latino	2	1.7

Table 3 *Continued*

Table 3 *Continued*

Variable	Category	*n*	%
Salary	Under $50,000	7	6.0
	$50-74,000	33	28.2
	$75-99,000	64	54.7
	$100-150,000	12	10.3
	Over $150,000	1	0.9
Household Income	Under $50,000	3	2.6
	$50-74,000	13	11.1
	$75-99,000	35	29.9
	$100-150,000	37	31.6
	Over $150,000	29	24.8

Table 4

Descriptive Statistics for Job Satisfaction Ratings Sorted by Highest Mean Rating (N = 117)

Rating	*M*	*SD*
5. Flexibility in scheduling hours	4.25	0.79
13. Your immediate supervisor	4.21	0.98
4. Hours that you work	4.20	0.76
14. Your nursing peers	4.19	0.84
15. The physicians you work with	4.02	0.77
17. Opportunities for social contact at work	3.92	0.73
1. Salary	3.91	0.69
19. Opportunities to interact professionally with other disciplines	3.91	0.75
16. The delivery of care method	3.88	0.82
29. Your amount of responsibility	3.85	0.83
18. Opportunities for social contact after work	3.81	0.81
21. Opportunities to belong to department or institutional committees	3.76	0.78
25. Recognition of your work from peers	3.76	0.80
9. Flexibility in scheduling your weekends off	3.74	1.00
2. Vacation	3.71	0.95
7. Opportunity for part-time work	3.68	0.82

Table 4 *Continued*

Table 4 *Continued*

Ratings	*M*	*SD*
8. Weekends off per month	3.66	1.09
6. Opportunity to work straight days	3.63	1.26
26. Amount of encouragement and positive feedback	3.58	0.95
23. Opportunities for career advancement	3.50	0.99
20. Opportunists to interact with faculty of the college of nursing	3.42	0.85
24. Recognition for your work from supervisors	3.39	1.07
30. Your control over work conditions	3.38	1.02
22. Control over what goes on in your work	3.38	0.93
27. Opportunities to participate in nursing research	3.27	0.89
11. Maternity time	3.26	0.84
3. Benefits package	3.24	1.08
31. Your participation in organizational decision making	3.18	1.07
28. Opportunities to publish	3.11	0.80
10. Compensation for working weekends	2.56	1.21
12. Childcare facilities	2.37	0.95

Table 4 displays the descriptive statistics for job satisfaction ratings sorted by the highest mean rating for the 31 items on the MMSS. The 3 highest job satisfaction ratings were for item 5: flexibility in scheduling hours ($M = 4.25$), followed by item 13: your immediate supervisor ($M = 4.21$), and item 4: hours that you work ($M = 4.20$). Items with the 3 lowest job satisfaction scores were item 12: Childcare facilities ($M = 2.37$),

followed by item 10: Compensation for working weekends (M = 2.56), and item 28: Opportunities to publish (M = 3.11) (Table 4).

Data Analysis

Preliminary Analyses

Cohen (1988) suggested some guidelines for interpreting the strength of linear correlations. He suggested that a weak correlation typically had an absolute value of r = .10 (about 1% of the variance explained), a moderate correlation typically had an absolute value of r = .30 (about 9% of the variance explained) and a strong correlation typically had an absolute value of r = .50 (about 25% of the variance explained). Therefore, for the sake of parsimony, Chapter 4 primarily highlighted those correlations that were at least 'moderate' strength to minimize the potential of numerous Type-I errors stemming from interpreting and drawing conclusions based on potentially spurious correlations.

As a preliminary set of analysis before generating the regression models, a series of Pearson product-moment correlations were calculated for the 9 scale scores with the 14 candidate variables. The 9 scale scores consisted of the 8 subscales of job satisfaction plus a total score while the 10 socio-demographic variables were broken down into 14 candidate variables for clarification during analysis. For the resulting 126 correlations, 21 were statistically significant at the $p < .05$ level. Two correlations were statistically significant at the $p < .001$ value and were also considered to be of moderate strength (Cohen, 1988). Specifically, nurses who worked the day shift had more favorable scheduling scores (r = .35, $p < .001$). In addition, nurses who had worked more years at the current hospital had lower coworkers scores (r = -.30, $p < .001$).

The outliers in the present study were identified on the socio-demographic variables of marital status, highest level of education, and salary. The next group of closest resemblance included any single participants identified. The socio-demographic variable of 'widowed', included a single participant, and this participant became part of the 'divorced/widowed' category (see Table 3).

There was just one participant from the diploma category for the highest level of education variable and this number was included under the Associates degree category. Finally the socio-demographic variable of salary above 150,000 also included just one participant. This single participant was added to the category of 100,000- 150, 000.

Simplification of Candidate Variables

The data collection was consistent with what was decided before this study. For analysis of the socio-demographic data, some dummy-coding was required for simplification and clarity. Dummy codes, a statistical term is used to group items together arising from mutually exhaustive categories or one that involves an exclusive category (Tobachnick & Fidell, 2001). For the current study three categorical variables were dummy-coded for the largest category.

The three variables that required dummy-coding included: shift worked, area of work, and cultural group. To provide more clarity during analysis the shift worked variable was broken down to three categories. The categorical variable of shift worked was dummy-coded as: worked day shift, worked night shift, and worked a rotating shift. Nurses responded to the three shifts identified with a yes or no answer. They either worked the shift identified or they did not work the particular shift.

Similarly the categorical variable of area of work was dummy-coded as ER and ICU. Nurses responded to the area of work identified with a yes or no answer. The cultural group also required dummy-coding because a large majority of Hawaii critical care nurses were found to be from two main cultures: Asian and Caucasian. The choices for Native Hawaiian/Pacific Islander, two or more races, and the Hispanic or Latino culture, were all added under a new category titled as others. The category titled as others, specified they were neither Asian nor Caucasian. Nurses responded to the main cultures identified using a yes or no answer.

The number of socio-demographics under a broad classification remained as 10. Instead of 10 socio-demographics the analysis was simplified using the following 14 categories of predictors: Marital status, day shift, night shift, rotating shift, average hours worked per week, highest level of education, years as critical care RN, years at current hospital, area of work ER, area of work ICU, Asian cultural group, Caucasian cultural group, and other cultural group who were neither Asian or Caucasian. The numbers increased to fourteen because shift worked included day, night and rotating shifts and the area of work included the ER and ICU. In addition the cultural group now included Asian, Caucasian and others. The analysis for each hypothesis is explained based on these 14 candidate variables.

Table 5

Psychometric Characteristics for Summated Scale Scores (N = 117)

Variable	Number of Items	*M*	*SD*	Low	High	Alpha
Extrinsic Rewards	3	3.62	0.72	2.00	5.00	.68
Scheduling	6	3.67	0.68	2.00	5.00	.74
Balance of Family and Work	3	3.10	0.56	1.33	5.00	.30
Coworkers	2	4.10	0.70	1.50	5.00	.68
Interaction Opportunities	4	3.8	0.61	2.00	5.00	.79
Professional Opportunities	3	3.42	0.68	1.67	5.00	.62
Praise and Recognition	4	3.72	0.73	1.75	5.00	.75
Control and Responsibility	6	3.44	0.6	1.33	5.00	.84
Total Score	31	111.73	15.27	77.00	155.00	.92

Table 5 displays the psychometric characteristics for the nine summated scale scores. The Cronbach alpha reliability coefficients ranged from r = .30 to *r* = .92 with a median alpha of *r* = .74. This suggested that all but the balance of family and work scale (*r* = .30) had adequate levels of internal reliability (Creswell, 2005) as indicated in Table 5.

Research Question One

What is the level of job satisfaction among critical care nurses in Hawaii? This research question was answered by using descriptive statistics to measure the overall mean for the global score on the MMSS tool. The highest possible score is 155, the

lowest is 31, and the midpoint is 93 on the MMSS tool. The total items on the questionnaire are 31 and the score can range from 31 to 155 and a higher score indicates higher job satisfaction (Mueller & McCloskey, 1990).

A mean job satisfaction score was calculated for the group by summing the total score and dividing by the total number of items on the MMSS tool. Results are first presented as the sum of the 31 MMSS items to obtain a total job satisfaction score as seen in Table 5 (M = 111.73). An overall mean score was useful in providing a measure of overall job satisfaction of critical care nurses, and a higher score indicated a higher level of job satisfaction (Mueller & McCloskey, 1990).

Individual job satisfaction subscale scores were then presented with Likert mean values (see Table 5). Mueller and McCloskey (1990) do not specify a cut point in the scores that predict job satisfaction. Each item on the MMSS tool is ranked on a 5-point Likert-type scale. A score of 1.0 is used for highly satisfied whereas a score of 5.0 is used for highly dissatisfied (Likert et al., 1993). The Likert mean score for the Hawaii critical care nurses was 3.60, obtained by taking an average of the individual mean Likert scores for each item on Table 4. If a score of 3.0 on the Likert-type scale is taken as the neutral point as done in past studies (Leung et al., 2007), the composite score of 3.60 is slightly above 3.0, indicating that the critical care nurses had a moderate level of job satisfaction.

Overall, for the individual 31 items on the MMSS (see Table 4) the scores ranged from a highest on flexibility of hours (M = 4.25) to the lowest on childcare facilities (M = 2.37). The two items on the MMSS that indicated job dissatisfaction with a score of less than 3.0 on the Likert-type scale, included: compensation for working weekends (M = 2.56) and childcare facilities (M = 2.37). None of the 31 items of the MMSS or the

subscales of job satisfaction had a maximum mean score of a 5.0 score on the Likert-type scale.

Each of the subscales of the MMSS indicated a Likert score above 3.0 (see table 5), indicating they were satisfied with the subscales of job satisfaction. The highest level of job satisfaction for Hawaii critical care nurses was on the subscale of coworkers (M = 4.10) followed by interaction opportunities (M = 3.88), praise and recognition (M = 3.72), scheduling (M = 3.67), extrinsic rewards (M= 3.62), control and responsibility (M = 3.44), professional opportunities (M = 3.42), and finally work and family balance (M=3.10). These results further indicate that Hawaii critical care nurses are satisfied with their jobs.

Research Question Two

What, if any, are the relationships of the 10 socio-demographics variables with the 8 MMSS job satisfaction subscales for nurses currently working within critical care settings in Hawaii? This research question was answered using eight hypotheses designed for this study based on the eight subscales of job satisfaction: "extrinsic rewards, scheduling, balance of family and work, coworkers, interaction opportunities, professional opportunities, praise and recognition, and control and responsibility" (Tourangeau, et al., 2006, p. 129). Each of the eight hypotheses was tested individually. Eight tables from Table 6 to Table 13 provide details of the hypotheses testing for this study.

The theoretical frameworks of Maslow (1954) and Herzberg (1966) have suggested motivation as a key factor in job satisfaction with emphasis on social, safety, and psychological rewards. The eight subscales the MMSS tool for this study were

distributed into categories of safety, social, and psychological needs and are presented under each hypothesis to indicate relevance to motivation. Safety and physiological needs relate to subscales of: extrinsic rewards, scheduling, and family and work balance (Mueller & McCloskey, 1990). Self esteem and belonging, a social need, is associated with subscales of: praise and recognition, coworkers, and interaction opportunities (Mueller & McCloskey). According to Maslow's theory, self actualization a psychological need relates to the following subscales of the MMSS: professional opportunities and control and responsibility (Mueller & McCloskey).

The primary dependent variables are the 8 MMSS subscales and the independent variables are a series of 10 socio-demographic variables gathered for each critical care nurse. Data was initially tabulated using standard summary statistics such as means, standard deviations, frequencies, and percentages. Each of the eight hypotheses addresses the second research question indicating the presence of correlations if any, between socio-demographics and job satisfaction.

Table 6

Prediction of Extrinsic Rewards Based on Selected Variables. Backward Elimination Regression (N=117)

Variable	*B*	*SE*	β	*p*
Intercept	3.62	0.07		.001

Note. None of the 14 predictors (10 demographics with dummy-coding) were related to the dependent variable at the $p < .10$.

Research Hypothesis One

Research Hypothesis One predicted that the linear combination of the 10 socio-demographic variables will predict the extrinsic rewards subscale score for nurses currently working within critical care settings in Hawaii. To test this, Table 6 displays the results of the backward elimination regression model. Table 6 does not include any significant independent variables of nurse socio-demographics predicting the dependent variable of job satisfaction. None of the independent variables predicted the extrinsic rewards score (Table 6). This provided support to retain the null hypothesis.

The linear combination of the 10 socio-demographics found no variables to be significant predicators. The linear combination of the 10 socio-demographics does not predict the extrinsic rewards subscale for nurses working in critical care settings in Hawaii. The answer to research question two for the extrinsic rewards variable is: there is no relationship between the 10 socio-demographic variables and the extrinsic rewards subscale of job satisfaction for nurses currently working within critical care settings in Hawaii (see Table 6)

Extrinsic reward is a safety need based on Maslow's theoretical framework (Mueller & McCloskey, 1990) and that of Herzberg (1954). There is no relationship of extrinsic rewards to any socio-demographics. For the critical care nurses in Hawaii, extrinsic reward was not a motivating factor based on any of the 10 socio-demographics used for this study.

Table 7

Prediction of Scheduling Based on Selected Variables. Backward Elimination Regression (N=117)

Variable	*B*	*SE*	β	*p*
Intercept	3.85	0.22		.001
Married [a]	0.29	0.13	.21	.03
Works the Day shift [a]	0.65	0.13	.43	.001
Years at Current Hospital	-0.02	0.01	-.21	.02
ER Nurse [a]	0.32	0.12	.23	.01
Caucasian Nurses [a]	-0.22	0.13	-.14	.10
Household Incomes	-0.12	0.06	-.18	.05

Final Model: F (6, 110) = 6.78, p = .001. R^2 = .270. Candidate variables = 14.

[a] Coding: 0 = *No* 1 = *Yes*

Research Hypothesis Two

Research Hypothesis Two predicted that the linear combination of the 10 socio-demographic variables will predict the scheduling subscale score for nurses currently working within critical care settings in Hawaii. To test this, Table 7 displays the results of the backward elimination regression model for the 14 candidate variables (10 socio-demographics with dummy-coding) predicting the nurse's scheduling score. The final six-variable model was significant (p= .001) and accounted for 27.0% of the variance in the dependent variable.

Inspection of the beta weights found that the dependent variable was higher at the $p < .05$ level for married nurses ($\beta = .21$, $p = .03$), those that worked the day shift ($\beta = .43$, $p = .001$), those with fewer years at the current hospital ($\beta = -.21$, $p = .02$), and those who were ER nurses ($\beta = .23$, $p = .01$), whereas marginally significant for those with a lower household income ($\beta = -.12$, $p = .05$) as seen in Table 7. This model provided support to accept the alternative hypothesis. Variables of non-Caucasian nurses were not statistically significant at the $p < .05$ level but all their probabilities were < .10 indicating potential avenues for further research.

The linear combination of the 10 socio-demographic variables predicted the scheduling subscale score for nurses currently working within critical care settings in Hawaii. The answer to research question two for the scheduling variable is: there is a relationship between 5 out of the 10 socio-demographic variables and the scheduling subscale of job satisfaction for nurses currently working within critical care settings in Hawaii (see Table 7). The five socio-demographics include: marital status, shift worked, years of experience at the current hospital, area of work, and lower household income.

Nurse's job satisfaction was impacted by flexible scheduling, a motivating factor in critical care nursing in Hawaii. Flexible scheduling was found as a motivating factor for Hawaii critical care nurses based on socio-demographics of: marital status, shift worked, years of experience at the current hospital, area of work, and household income. Flexible scheduling is considered a safety need based on Maslow's framework (Mueller & McCloskey, 1990) and relates to Herzberg's (1954) motivator hygiene theory.

A significant relationship to job satisfaction based on scheduling was seen for nurses who were: married, worked the day shift, had fewer years of experience at the

current hospital, were working in the ER, and had a lower household income. In other words, flexible scheduling is particularly important to meet the safety needs of critical care nurses. Without meeting basic needs of safety, nurses cannot be motivated to work in critical care settings in Hawaii which in turn affects job satisfaction.

Table 8

Prediction of Balance of Family and Work Based on Selected Variables. Backward Elimination Regression (N=117)

Variable	*B*	*SE*	β	*p*
Intercept	3.28	0.20		.001
Works the Day Shift [a]	0.22	0.11	.17	.06
Years as Critical Care RN	0.01	0.01	.21	.07
Years at Current Hospital	-0.02	0.01	-.18	.10
ICU or CCU Nurse [a]	-0.27	0.10	-.25	.005
Asian Nurses [a]	0.40	0.10	.35	.001
Household Income	- 0.09	0.05	-.1	.07

Final Model: F (6, 110) = 5.19, p = .001. R^2 = .221. Candidate variables = 14.

[a] Coding: 0 = *No* 1 = *Yes*

Research Hypothesis Three

Research Hypothesis Three predicted that the linear combination of the 10 socio-demographic variables will predict the balance of family and work subscale score for nurses currently working within critical care settings in Hawaii. To test this, Table 8 displays the results of the backward elimination regression model for the 14 candidate

variables (10 demographics with dummy-coding) predicting the nurse's family and work balance score. The final six-variable model was significant (p= .001) and accounted for 22.1% of the variance in the dependent variable.

Inspection of the beta weights found the dependent variable was significantly higher at the $p < .05$ level for those nurses who were not ICU or CCU nurses ($\beta = -.25$, $p = .005$) and those that were Asian nurses ($\beta = .35$, $p = .001$), as seen in Table 8. This model provided support to accept the alternative hypothesis. The linear combination of the 10 socio-demographic variables predicts the balance of family and work subscale score for nurses currently working within critical care settings in Hawaii. Those nurses who worked the day shift ($\beta = .17$, $p = .06$), those with more years as a critical care RN ($\beta = .21$, $p = .07$), those with fewer years at the current hospital ($\beta = -.18$, $p = .10$), and those with a lower household income ($\beta = -16$, $p = .07$) were not statistically significant at the $p < .05$ level but all their probabilities were < .10 indicating potential avenues for further research.

The answer to research question two for the balance of family and work variable is: there is a relationship between 2 out of the 10 socio-demographic variables and the balance of family and work subscale of job satisfaction for nurses currently working within critical care settings in Hawaii (see Table 8). The two socio-demographics include: cultural group and area of work. For critical care nurses in Hawaii, a balance of family and work was found to be a motivating factor based on socio-demographics of cultural group and area of work.

A balance of family and work subscale of job satisfaction is a safety need based on Maslow's motivational theory (Mueller & McCloskey, 1990) and is considered as a

motivator in Herzberg's (1966) theoretical framework. To meet the safety need for the critical care nurse, a balance of family and work was found to be of high importance in Hawaii. A balance of family and work as a motivating factor for the critical care RN affects job satisfaction.

Table 9

Prediction of Coworkers Based on Selected Variables. Backward Elimination Regression (N=117)

Variable	*B*	*SE*	β	*p*
Intercept	4.72	0.23		.001
Years at Current hospital	-0.03	0.01	-.2	.005
ER Nurse [a]	0.27	0.12	.19	.03
Household Income	-0.14	0.06	-.21	.02

Final Model: F (3, 113) = 7.73, p = .001. R^2 = .170. Candidate variables = 14.

[a] Coding: 0 = *No* 1 = *Yes*

Research Hypothesis Four

Research Hypothesis Four predicted that the linear combination of the 10 socio-demographic variables will predict the coworkers subscale score for nurses currently working within critical care settings in Hawaii. To test this, Table 9 displays the results of the backward elimination regression model for the 14 candidate variables (10 demographics with dummy-coding) predicting the nurse's coworkers score. The final

three-variable model was significant (p= .001) and accounted for 17.0% of the variance in the dependent variable.

Inspection of the beta weights found the dependent variable was higher for nurses with fewer years at the current hospital (β = -.25, p = .005), those who were ER nurses (β = .19, p = .03), and those with lower household income (β = -.21, p = .005) as seen in Table 9. This model provided support to accept the alternative hypothesis. The linear combination of the 10 socio-demographic variables predicts the coworkers subscale score for nurses currently working within critical care settings in Hawaii. The answer to research question two for the coworker variable is: there is a relationship between 3 out of the 10 socio-demographic variables and the coworker subscale of job satisfaction, for nurses currently working within critical care settings in Hawaii (see Table 9). The three socio-demographics include: years of experience at the current hospital, area of work, and household income.

Coworkers in the critical care setting meet the social needs of the critical care RN according to the Maslow's framework of motivation (Mueller & McCloskey, 1990) and are motivators in Herzberg's Motivator Hygiene framework (1966). Coworkers affect motivation to work in Hawaii. Coworkers are motivating factors based on three socio-demographics to include: years of experience at the current hospital, area of work, and household income.

Nurses with fewer years of experience at the current hospital, lower household income and those RNs working in the ER had a significant relationship to job satisfaction. The current coworkers in the critical care unit are particularly important to nurses with fewer years of experience, lower household income and the critical care

nurses working in the ER, to meet their need of esteem and sense of belonging. Without usual coworkers who include peers and physicians, motivation to work may be lower, resulting in an effect on job satisfaction and patient care outcomes.

Table 10.

Prediction of Interaction Opportunities Based on Selected Variables. Backward Elimination Regression (N=117)

Variable	*B*	*SE*	β	*p*
Intercept	4.69	0.24		.001
Works the Night Shift [a]	-0.32	0.14	-.24	.02
Works a Rotating Shift [a]	-0.47	0.13	-.37	.001
Level of Education	-0.17	0.10	-.15	.09
Years at Current Hospital	-0.03	0.01	-.31	.001

Final Model: F (4, 112) = 5.70, p = .001. R^2 = .169. Candidate variables = 14.

[a] Coding: 0 = *No* 1 = *Yes*

Research Hypothesis Five

Research Hypothesis Five predicted that the linear combination of the 10 socio-demographic variables will predict the interaction opportunities subscale score for nurses currently working within critical care settings in Hawaii. To test this, Table 10 displays the results of the backward elimination regression model for the 14 candidate variables (10 demographics with dummy-coding) predicting the nurse's interaction opportunities

score. The final four-variable model was significant ($p = .001$) and accounted for 16.9% of the variance in the dependent variable.

Inspection of the beta weights found the dependent variable was significantly higher at the $p < .05$ level for those that did not work the night shift ($\beta = -.24$, $p = .02$), those that did not work a rotating shift ($\beta = -.37$, $p = .001$), and those with fewer years at the current hospital ($\beta = -.31$, $p = .001$) as seen in Table 10. This model provided support to accept the alternative hypothesis. The linear combination of the 10 socio-demographic variables predicts the interaction opportunities subscale score for nurses currently working within critical care settings in Hawaii. Those nurses with a lower level of education ($\beta = -.15$, $p = .09$) were not statistically significant at the $p < .05$ level but their probabilities were < .10 indicating potential avenues for further research.

The answer to research question two for the interaction opportunities variable is: there is a relationship between 2 out of the 10 socio-demographic variables and the interaction opportunities subscale of job satisfaction for nurses currently working within critical care settings in Hawaii (see Table 10). The two socio-demographics include: shift worked and years of experience at the current hospital. For Hawaii, interaction opportunities are motivating factors based on socio-demographics of shift worked and years of experience at the current hospital.

Interaction opportunities in the critical care setting meets the social need of the critical care nurse based on Maslow's theory (Mueller & McCloskey, 1990) and are considered motivators under Herzberg's (1966) motivator-hygiene framework. A significant relationship to job satisfaction was seen for critical care nurse who did not work the night shift or a rotating shift and those with fewer years of experience at the

current hospital. Consideration for interaction opportunities based on specific socio-demographics of shift worked and years of experience at the current hospital should be given because they are motivating factors impacting job satisfaction of critical care RNs in Hawaii.

Table 11

Prediction of Professional Opportunities Based on Selected Variables. Backward Elimination Regression (N=117)

Variable	*B*	*SE*	β	*p*
Intercept	3.35	0.07		.001
Works the Day Shift [a]	0.27	0.14	.18	.06

Final Model: F (1, 115) = 3.77, p = .06. R^2 = .032. Candidate variables = 14.

[a] Coding: 0 = *No* 1 = *Yes*

Research Hypothesis Six

Research Hypothesis Six predicted that the linear combination of the 10 socio-demographic variables will predict the professional opportunities subscale score for nurses currently working within critical care settings in Hawaii. To test this, Table 11 displays the results of the backward elimination regression model for the 14 candidate variables (10 demographics with dummy-coding) predicting the nurse's professional opportunities score. The final one-variable model just failed to reach significance (p= .06) and accounted for 3.2% of the variance in the dependent variable (Table 11).

Inspection of the beta weights found there were no variables to be significant predictors (Table 11). This model provided partial support to accept the null hypothesis. The linear combination of the 10 socio-demographic variables does not predict the professional opportunities subscale score for nurses currently working within critical care settings in Hawaii. Those nurses who worked the day shift ($\beta = .18$, $p = .06$) were not statistically significant at the $p < .05$ level but their probabilities were < .10 indicating potential avenues for further research.

The answer to research question two for the professional opportunities variable is: there is a no relationship between the 10 socio-demographic variables and the professional opportunities subscale of job satisfaction for nurses currently working within critical care settings in Hawaii (see Table 11). Professional opportunities in the critical care setting meets the psychological need based on Maslow's theory (1954) and are considered as motivators in Herzberg's (1966) motivator-hygiene framework. The professional opportunities provided for the critical care RN are not motivating factors based on any of the 10 socio-demographic variables used for this study.

Table 12

Prediction of Praise and Recognition Based on Selected Variables. Backward Elimination Regression (N=117)

Variable	*B*	*SE*	β	*p*
Intercept	4.05	0.15		.001
Works the Night Shift [a]	-0.36	0.17	-.23	.04
Works a Rotating Shift [a]	-0.28	0.16	-.19	.09
Years as Critical Care RN	-0.01	0.01	-.17	.08

Final Model: F (3, 113) = 2.39, p = .07. R^2 = .060. Candidate variables = 14.

[a] Coding: 0 = *No* 1 = *Yes*

Research Hypothesis Seven

Research Hypothesis Seven predicted that, the linear combination of the 10 socio-demographic variables will predict the praise and recognition subscale score for nurses currently working within critical care settings in Hawaii. To test this, Table 12 displays the results of the backward elimination regression model for the 14 candidate variables (10 demographics with dummy-coding) predicting the nurse's praise and recognition score. The final three-variable model just failed to reach significance (p= .07) and accounted for 6.0% of the variance in the dependent variable.

Inspection of the beta weights found the dependent variable was significantly higher at the $p < .05$ for those nurses who did not work the night shift (β = -.23, p = .04) as seen in Table 12. This model provided partial support to accept the alternative hypothesis. The linear combination of the 10 socio-demographic variables predicts the praise and recognition subscale score for nurses currently working within critical care

settings in Hawaii. Those who did not work rotating shifts (β = -.19, p = .09), and those with fewer years of experience as a critical care RN (β = -.17, p = .08) as seen in Table 12 were not statistically significant at the $p < .05$ level but all their probabilities were < .10 indicating potential avenues for further research.

The answer to research question two for the praise and recognition variable is: there is a relationship between 1 out of the 10 socio-demographic variables and the praise and recognition subscale of job satisfaction for nurses currently working within critical care settings in Hawaii (see Table 12). The socio-demographic includes the shift by nurses. The praise and recognition subscale of job satisfaction for critical care RNs in Hawaii meets the social need based on Maslow's framework of motivation (Mueller & McCloskey, 1990) and relates to Herzberg's motivational hygiene theory.

Praise and recognition given to the critical care RN was found to be a motivating factor based on the socio-demographic of shift worked. Critical care nurses who do not work night shifts in critical care units had a significant relationship to satisfaction. Without praise and recognition based on shift worked, the motivation to work is reduced resulting from reduced self esteem and a sense of belonging, which are important aspects of the social need (Mueller & McCloskey, 1990).

Table 13

Prediction of Control and Responsibility Based on Selected Variables. Backward Elimination Regression (N=117)

Variable	*B*	*SE*	β	*p*
Intercept	4.14	0.23		.001
Years as Critical Care RN	-0.02	0.01	-.22	.02
Household Income	-0.15	0.06	-.23	.01

Final Model: F (2, 114) = 6.34, p = .002. R^2 = .100. Candidate variables = 14.

Research Hypothesis Eight

Research Hypotheses Eight predicted that the linear combination of the 10 socio-demographic variables will predict the work control and responsibility subscale score for nurses currently working within critical care settings in Hawaii. To test this, Table 13 displays the results of the backward elimination regression model for the 14 candidate variables (10 demographics with dummy-coding) predicting the control and responsibility score. The final two-variable model was significant (p= .002) and accounted for 10.0% of the variance in the dependent variable.

Inspection of the beta weights found the dependent variable was higher for those with fewer years as a critical care RN (β = -.22, p = .02), and those with a lower household income (β = -.23, p = .01) as seen in Table 13. This model provided support to accept the alternative hypothesis. The linear combination of the 10 socio-demographic variables predicts the work control and responsibility subscale score of job satisfaction

for nurses currently working within critical care settings in Hawaii. The answer to research question two for the control and responsibility variable is: there is a relationship between 2 out of the 10 socio-demographic variables and the control and responsibility subscale of job satisfaction for nurses currently working within critical care settings in Hawaii (see Table 13). The two socio-demographics include: years of experience as a critical care nurse and household income.

Control and responsibility in the critical care setting meets the psychological need based on Maslow (1954) and are considered motivators in Herzberg's (1966) framework. The amount of control and responsibility provided for the critical care RN was found to be a motivating factor based on the socio-demographics of years of experience as a critical care nurse and household income. A lower household income and fewer years of experience among Hawaii critical care nurses indicated significant correlations to job satisfaction. If some control and responsibility is not given to Hawaii critical care RNs based on years of experience as critical care RNs and household income, they may not reach a sense of actualization. The psychological need of self actualization is fulfilled by management efforts that enable employees to grow (Herzberg, 1966).

Summary

The results of the quantitative study using a correlation design indicated a relationship between socio-demographics and job satisfaction among Hawaii critical care nurses. The MMSS tool (Mueller & McCloskey, 1990) and a socio-demographic profile was used to determine the level of job satisfaction and the existence of a relationship between socio-demographics and subscales of job satisfaction for the critical care nurses

in Hawaii. A total of 117 nurses, employed at three major medical centers participated in this study.

Critical care nurses were found to have a moderate level of overall job satisfaction and were satisfied with the eight subscales of job satisfaction from the MMSS scale (see Table 5). The highest job satisfaction was in flexibility in scheduling followed by immediate supervisor, hours of work, and peers. The lowest job satisfaction was seen in the subscale of childcare facilities followed by the following subscales: compensation for working weekends, opportunities to publish, and participation in organizational decision making.

The socio-demographic variables predicted six of the eight subscales of job satisfaction for Hawaii critical care nurses. The null hypothesis was accepted for two hypotheses. The study found that the linear combination of the 10 socio-demographics does not predict the rewards and the professional opportunities subscale for nurses currently working within critical care settings in Hawaii. Rejection of the null hypothesis for six out of the eight hypotheses suggested presence of a relationship between socio-demographics and six subscales of job satisfaction. The linear combination of the 10 socio-demographic variables predicts the scheduling, family and work balance, praise and recognition, coworkers, interaction opportunities, and the control and responsibility subscale, for nurses currently working within critical care settings in Hawaii.

The extrinsic rewards subscales and the professional opportunities subscale did not show any significance to the 10 socio-demographic variables (see Table 6 & 11). None of the socio-demographic variables predicted job satisfaction based on extrinsic rewards or professional opportunities. There were five different socio-demographic

variables that predicted job satisfaction for the scheduling subscale and two predicted the balance of family and work subscale. The job satisfaction based on the scheduling subscale was higher for critical care nurses who were married, worked the day shift, had fewer years at the current hospital, worked in the ER, and had a lower household income (see Table 7). Job satisfaction based on the balance of family and work subscale was higher for nurses who were Asians and who did not work the ICU or CCU (see Table 8).

Three socio-demographic variables predicted job satisfaction for the coworker subscale of job satisfaction while two predicted the interaction opportunities subscale. Job satisfaction for the coworker subscale was higher for nurses with fewer years of experience at the current hospital, who worked in the ER, and who had a lower household income (see Table 9). Job satisfaction based on the interaction opportunities subscale was higher for critical care nurses who worked the night shift or those who did not work a rotating shift, and for those who had fewer years of experience at the current hospital (see Table 10).

One socio-demographic variable predicted the praise and recognition subscale of job satisfaction and two socio-demographics predicted the control and responsibility subscale. The job satisfaction based on praise and recognition was higher for those critical care nurses who did not work the night shift (see Table 12). The control and responsibility subscale of job satisfaction was higher for nurses with fewer years of experience as critical care nurses and a lower household income (see Table 13).

The motivating factors for critical care nurses based on specific socio-demographics included all the subscales of job satisfaction except extrinsic rewards and professional opportunities. For Hawaii, the safety need of extrinsic rewards does not

motivate critical care nurses based on socio-demographics. The safety need identified by flexible scheduling and a balance of family and work based on specific socio-demographics was a found to be a motivating factor.

The social need for self esteem and belonging identified by: praise and recognition, coworkers, and interaction opportunities, were found to be motivating factors based on a few socio-demographics. The psychological need for self actualization identified by control and responsibility was also found to be a motivating factor based on socio-demographics of critical care nurses in Hawaii. Herzberg's (1954) and Maslow's (1966) motivational theories indicate the importance of meeting safety, social, and psychological needs to improve motivation to work and subsequently job satisfaction. If consideration is given to motivational factors based on specific socio-demographics identified in this study, nurses will remain satisfied and committed to their jobs in Hawaii, resulting in reduced nurse shortage and effective patient care. Chapter 5 of this study provides a discussion on implications and recommendation of findings.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

Continual changes in the delivery of healthcare, high emphasis on cost-effectiveness, and use of new sophisticated equipment create challenges to nurses caring for the critically ill patient with implications to job satisfaction. The specific problem is the current nurse shortage (AACN, 2008; Lin et al., 2008; Mealer et al., 2007) and issues in nurse retention (Cram, 2007; Lin et al.; McGuire & Kennerly, 2006; Poter-Wenzlaff & Froman, 2008) especially in critical care units in Hawaii (LeVasseur , 2008) and nationally (Braithwaite, 2008; Ruggiero, 2005). The purpose of the current study was to quantify the level of job satisfaction and explain the relationship that may or may not have existed, between the 10 socio-demographics variables and the 8 subscales of job satisfaction using the MMSS tool and a socio-demographic profile form. The sample for the current research included practicing critical care nurses who were employed part time or full-time at a hospital in Hawaii. Identification of important relationships that affect job satisfaction among critical care nurses may assist leaders in developing effective strategies to improve the job satisfaction level of critical care nurses in Hawaii.

The results of the current quantitative correlational study may not be generalized because of the four limitations pertaining to the choice of methods used. One of the limitations of this study was on the participants selected for this study who were currently practicing critical care registered nurses in Hawaii and who met specific criteria described in the design.

The nurses included in this study were those taking care of adult patients in the ICU and did not include pediatric ICU nurses. The results of this study may not apply to pediatric ICU nurses. Attempts made to include pediatric ICU nurses were unsuccessful

because of IRB rejection of the current research study by the specific health organization. To reduce this limitation ER nurses were included because they normally have experiences with both adult and pediatric patients.

The second limitation was that this study was exclusively for the state of Hawaii. This approach to the study indicated that the responses may be specific to the socio-demographic group of nurses in Hawaii. Although a limitation, the main focus of the study was on Hawaii critical care nurses and the study addressed the purpose of the study by explaining relationships specific to the state of Hawaii.

To improve credibility and reduce the limitation, three different hospitals from the east and west of the island were used. In addition, different specialty ICU settings were used which are similar to the ones in other states of the U.S. Although the socio-demographics may vary, having a wide variety of hospitals and different critical care work settings may reduce the limitation because the work environment will have similarities to other states.

The third limitation of this study was that the method chosen for data collection required only voluntary participation of critical care nurse-participants, which prevented responses from non-participants for this study resulting in non-participation bias. This limitation was overcome by encouraging participation by giving adequate information of the study prior to data collection. For the comfort of the nurses a meal was also provided during data collection. Majority of the nurses participated in the study and non-participants were mainly those that were extremely busy with patient care.

The fourth limitation was based on the approach used to inform the participants of the purpose of the study. Under this premise the participants knew the purpose of this

study and their responses may have been made under such influence. The responses of the survey participants varied based on individual experiences and no control over individual biases could be maintained. To reduce this limitation the nurses were not required to write their names and assurance of the anonymity of responses was re-enforced. Names were not connected to the completed surveys in order to encourage honest participation and reduce bias. Chapter 5 reports the major conclusions of this study, implications to leadership and finally the recommendation for key stakeholders and for future research. This chapter also compares findings to previous research, theory, and practice in critical care nursing.

Major Conclusions

The quantitative correlational study was designed to determine the level of job satisfaction and explain the relationship between the socio-demographics and the subscales of job satisfaction as designed in the MMSS. A total of 117 critical care nurses of different socio-demographics (see Table 3) participated in this study from three major medical centers, providing a diverse sample consistent with the diversity and Hawaii socio-demographic description of the survey results reported by the HSCN (2008). The diversity in ethnicity has implications to nursing education and practice (Maddelena, 2009).

Nurse's job satisfaction varies among nurses with influences of individual characteristics. Majority of the nurses were Asian, married, worked rotating shifts, had a bachelor's degree, and worked the ICU. Participants had a median of seven years of experience both at the current hospital and in critical care settings. This study on the 117 participants addressed two major research questions.

The first research question was, ‘What is the level of job satisfaction among critical care nurses in Hawaii? This study revealed that the critical care nurses had a moderate level of job satisfaction. The highest job satisfaction rating based on the 31 questions on the MMSS tool was on flexibility in scheduling followed by immediate supervisor, hours worked, and nursing peers (see Table 4). Low ratings in job satisfaction included opportunities to publish and participation in organizational decision making. Dissatisfaction among critical care nurses was in the areas of childcare facilities and compensation for working weekends.

The data on the eight subscales of job satisfaction from the MMSS indicated that critical care nurses in Hawaii were satisfied in all eight subscales of job satisfaction (see Table 5). The highest level of job satisfaction for Hawaii critical care nurses was on the subscale of coworkers ($M = 4.10$) followed by interaction opportunities ($M = 3.88$) praise and recognition ($M = 3.72$), scheduling ($M = 3.67$), extrinsic rewards ($M = 3.62$), control and responsibility ($M = 3.44$), professional opportunities ($M = 3.42$) and finally the least satisfaction in balance of family and work ($M = 3.10$). Hawaii critical care nurses were moderately satisfied with work conditions in the critical care unit based on the eight subscales.

The second research question was, “What, if any, are the relationships of the 10 socio-demographics variables with the eight MMSS job satisfaction subscales for nurses currently working within critical care settings in Hawaii?” This research question was answered using eight hypotheses designed for this study based on the eight subscales of job satisfaction: “extrinsic rewards, scheduling, balance of family and work, coworkers, interaction opportunities, professional opportunities, praise and recognition, and control

and responsibility" (Tourangeau, et al., 2006, p. 129). Each of the eight hypotheses was tested individually.

Rejection of the null hypotheses for six out of the eight hypotheses suggests the presence of a relationship between the socio-demographics variables and the six subscales of job satisfaction for nurses currently working within critical care settings in Hawaii. No relationship was found between nurse socio-demographics and extrinsic rewards or professional opportunities. This study on 117 critical care nurses in Hawaii revealed the following:

1. The linear combination of the 10 socio-demographic variables does not predict the extrinsic rewards subscale score for nurses currently working within critical care settings in Hawaii. There is no relationship between the 10 socio-demographic variables and extrinsic rewards subscale of job satisfaction for nurses currently working within critical care settings in Hawaii (see Table 6).

2. The linear combination of the 10 socio-demographic variables predicts the scheduling subscale score for nurses currently working within critical care settings in Hawaii. This study indicated that there is a relationship between 5 out of the 10 socio-demographic variables and the scheduling subscale of job satisfaction for nurses currently working within critical care settings in Hawaii. The five socio-demographics include: marital status, shift worked, years of experience at the current hospital, area of work, and household income (see Table 7).

3. The linear combination of the 10 socio-demographic variables predict the balance of family and work subscale score for nurses currently working within critical care settings in Hawaii. There is a relationship between 2 out of the 10 socio-

demographic variables and the balance of family and work subscale of job satisfaction for nurses currently working within critical care settings in Hawaii. The two socio-demographics include cultural group and the area of work (see Table 8).

4. The linear combination of the 10 socio-demographic variables predict the coworkers subscale score for nurses currently working within critical care settings in Hawaii. There is a relationship between 3 out of the 10 socio-demographic variables and the coworker subscale of job satisfaction for nurses currently working within critical care settings in Hawaii. The three socio-demographics include: years of experience at the current hospital, area of work, and household income (see Table 9).

5. The linear combination of the 10 socio-demographic variables predict the interaction opportunities subscale score for nurses currently working within critical care settings in Hawaii. There is a relationship between 2 out of the 10 socio-demographic variables and the interaction opportunities subscale of job satisfaction for nurses currently working within critical care settings in Hawaii. The two socio-demographics include shift worked and years of experience at the current hospital (see Table 10).

6. The linear combination of the 10 socio-demographic variables does not predict the professional opportunities subscale score for nurses currently working within critical care settings in Hawaii. There is no relationship between any of the 10 socio-demographic variables and the professional opportunities subscale of job satisfaction for nurses currently working within critical care settings in Hawaii (see Table 11).

7. The linear combination of the 10 socio-demographic variables predict the praise and recognition subscale score for nurses currently working within critical care settings in Hawaii. There is a relationship between 1 out of the 10 socio-demographic

variables and the praise and recognition subscale of job satisfaction for MMSS job for nurses currently working within critical care settings in Hawaii. The socio-demographic includes the shift worked by the critical care nurse (see Table 12).

8. The linear combination of the 10 socio-demographic variables will predict the work control and responsibility subscale score for nurses currently working within critical care settings in Hawaii. There is a relationship between 2 out of the 10 socio-demographic variables and the control and responsibility subscale of job satisfaction for nurses currently working within critical care settings in Hawaii. The two socio-demographics include: years of experience as a critical care nurse and the household income (see Table 13).

Implications

Job satisfaction and organizational commitment among critical care nurses impact the shortage of nurses. About five million patients are admitted each year into critical care units with numbers increasing from a higher life expectancy of people (Carr, 2009). A report published by the American Association of Critical Care Nurses (2008a) indicated a rise in the requests for critical care nurses in the entire U.S. resulting from the higher needs of the sick in the adult intensive care unit (ICU) and the emergency room (ER).

The purpose of this study was to determine the level of job satisfaction for critical care nurses in Hawaii and explore relationships between socio-demographics and job satisfaction. The MMSS instrument was used to reflect the job satisfaction scores for the 117 participants using Likert mean values. If a score of 3.0 on the Likert-type scale is taken as the neutral point as done in past studies (Leung et al., 2007), the composite score

of 3.60 is slightly above 3.0, indicating that the critical care nurses had a moderate level of job satisfaction. Out of the 31 items on the MMSS the critical care nurses were dissatisfied in two items: childcare facilities and compensation for working on the weekends. Each of the subscales of job satisfaction had a Likert score above 3.0 (see table 5) indicating they were satisfied with the subscales of job satisfaction.

Accepting the alternate hypotheses for six out of the eight hypotheses indicated that at least one socio-demographic variable of the critical care nurse had a relationship to most subscales of job satisfaction excluding the extrinsic rewards and the professional opportunities subscale. Mueller and McCloskey (1990) created eight subscales of job satisfaction using 31 questions of the MMSS tool. Six subscale of job satisfaction were impacted by the socio-demographic variables of Hawaii nurses. Results of this study were consistent with other studies indicating socio-demographic variables were related to job satisfaction of nurses (Ferreira, 2007; Ulrich et al., 2009).

The findings of the present study add to the limited body of knowledge on critical care nurses currently working in Hawaii and provide information on their motivation based on unique socio-demographics. The results also add to the literature by identifying work related conditions in critical care that reflect highest and lowest job satisfaction levels among critical care nurses in Hawaii. The results of this study may guide strategies for retention, recruitment, organizational commitment, and nursing practice in the critical care setting. The implications of this study to leadership are explained using the level of job satisfaction among nurses in Hawaii and the eight subscales of the MMSS. The following are some of the areas with leadership implications based on the results of this study.

Level of Job Satisfaction

The critical care nurses in Hawaii were found to have a moderate level of overall job satisfaction. The MMSS instrument was specifically designed for assessment of job satisfaction among nurses working in a hospital setting (Mueller & McCloskey, 1990). Across cultures, other studies with the MMSS tool also indicated a moderate level of nurse job satisfaction among psychiatric nurses in Hong Kong (Leung et al., 2007), Palestine nurses (Misener, et al., 1996), British nurses (Price, 1992), and U.S. nurses (Mueller & McCloskey). The level of job satisfaction has implications to nurse educators, nurse managers and health care administration. Promoting a higher level of job satisfaction among nurses is useful in influencing nurse retention and reducing the critical care nurse shortage.

Implications of general dissatisfaction and recognizing early signs of job dissatisfaction among nurses are crucial to patient safety. Out of the 31 items on the survey, critical care nurses in Hawaii were dissatisfied in two areas: childcare facilities and compensation for working the weekends. Job dissatisfaction can reduce motivation to work in critical care with resulting implications to patient care (Braithwaite, 2008; Ruggiero, 2005).

Hong Kong nurses had the lowest satisfaction in the balance of family and work and the professional opportunities subscale of job satisfaction (Leung, et al., 2007) whereas British nurses had the lowest satisfaction in professional opportunities, compensation for working weekends, and the control and responsibility subscale of job satisfaction (Price, 2002). Palestine nurses had dissatisfaction in professional opportunities and childcare facilities. Findings on a diverse nurse population such as

Hawaii highlight common and uncommon items of job satisfaction that ultimately could have an impact on patient care resulting from reduced motivation to work in critical care settings.

Each health organization has a mission and vision with relevance to safe patient care. Patient safety is influenced by satisfied nurses who are motivated to work. Motivation is a major factor for job satisfaction (Herzberg, 1966; Maslow, 1954). Working weekends without adequate compensation may reduce the motivation to work because working on weekends may be unsuitable to the lifestyle of critical care nurses. As a result there may be higher nurse absences and staffing issues in critical care nursing.

Nurse-managers could use the knowledge gained from this study to understand how poor motivation without compensations for working weekends could reflect on absences from nurses. Poor staffing on weekends may also result in use of outside agency nurses who are expensive to hire and may be unfamiliar with all the routines of the critical care unit. Hospital administration staff should realize that if nurses are compensated for working weekends they would prefer to work weekends, resulting in improvement in nurse retention, safe patient care and reduced costs of hiring outside nurses.

Another job dissatisfaction item among critical care nurses in Hawaii included childcare facilities. This finding was common across Palestine nurses (Misener et al., 1996). Nurses with children may be facing difficulties with working 8-12 hour shifts in the critical care unit without assistance available for childcare. Critical care unit managers and hospital administration could lose nurses because of inconveniences related

to childcare. This further has an impact on the existing critical care nurse shortage in Hawaii (HSCN, 2008) and on the rising demand (Carr, 2009).

Among the eight subscales of job satisfaction, past studies have shown dissatisfaction among nurses with the balance of family and work and professional opportunities subscale (Leung et al., 2007), whereas the current study indicates a job satisfaction with balance of family and work subscale and low satisfaction in professional opportunities (see Table 5). These findings suggest a slight variation in findings on nurse job satisfaction across cultures. The control and responsibility subscale and the praise and recognition subscale had the lowest job satisfaction level among critical care nurses in Hawaii. Similar findings were seen among British nurses where the control and responsibility subscale had low satisfaction levels (Price, 1992). Implications to leadership based on each subscale of job satisfaction and its relation to specific nurse socio-demographics are discussed below.

Extrinsic Rewards

A significant finding of the current study indicated extrinsic rewards based on the 10 socio-demographic variables were not motivational factors for job satisfaction among critical care nurses in Hawaii. Herzberg (1966) identified extrinsic rewards to have an impact on work motivation. Mueller and McCloskey (1990) indicated all eight subscales to influence motivation to work based on Maslow's hierarchy of needs. As identified in the MMSS, specific improvement in extrinsic rewards such as insurance, retirement, vacation, and salary (see Table 1) as a sole avenue to increase job satisfaction may be less important among critical care nurses in Hawaii.

Past studies with the MMSS did show extrinsic rewards as a motivating factor of job satisfaction (U.S. BHP, 2000; Leung et al., 2007). The public does not recognize monetary benefits for nurses to be influencing the care provided by nurses (Baer, 2009). Maslow identified extrinsic rewards as a safety need that affects motivation of nurses to work (Mueller & McCloskey, 1990).

For critical care nurses in Hawaii, extrinsic rewards based on the 10 socio-demographics does not predict job satisfaction. Buerhaus (2008b) explain the importance of improving retention through higher wages for nurses. Leaders in healthcare should be aware that increased emphasis on higher wages/benefits for nurses alone with the intent of improving retention may be less important for critical care nurses compared to other crucial factors of job satisfaction revealed from this study.

Flexible Scheduling

Flexible scheduling was a motivational factor for the following nurses who: were married, worked in the ER, worked the day shift, those with lower household income, and those with fewer years of experience at the current hospital. This correlation implies the importance of considering flexible scheduling for nurses with these specific socio-demographics. Specific consideration is required for the following items of the MMSS that address scheduling (see Table 1): hours of work, flexibility in scheduling hours and weekend off, opportunities to work the day shift, lower household income, and compensation for working weekends (Mueller & McCloskey, 1990).

Past studies indicated flexibility in work hours and schedules had a positive effect on nurse job satisfaction (Wild, et al., 2006; Swaidek, 2009) but this study did not identify any specificity to particular nurse socio-demographic or provide information

based on critical care settings. The findings of this study add to the body of knowledge on specific nurse socio-demographics in Hawaii predicting level of job satisfaction with flexible scheduling. The results imply that flexible scheduling if continued for Hawaii nurses will promote job satisfaction and thus retention.

The present study had implications for recruitment of new critical care nurses at hospitals because flexibility in scheduling was a motivating factor based on fewer years of experience at the current hospital. Specifically, nurses who worked the day shift had more favorable scheduling scores ($r = .35$, $p < .001$). Nurses with fewer years of experience may have a lower sense of burnout than would nurses with more years of experience. Implications of this finding are relevant to recruitment and nurse managers in a health care organization who are encouraged to provide equal opportunity and consideration in hiring new nurses to the unit rather than mainly moving nurses from other specialties within the hospital directly into critical care nursing.

Family and Work Balance

Family and work balance is considered a safety need that motivates nurses to work (Mueller & McCloskey, 1990). According to the MMSS tool, the items that provide a balance of work and family include (see Table 1): childcare facilities, opportunities for part-time work, and maternity leave (Mueller & McCloskey). Safety in the work environment as a motivator has been known to influence the job satisfaction of nurses (U.S. BHP, 2000). Family and work balance was a motivational factor for nurses who were Asian and worked the day shift.

Recognition and awareness of culturally sensitive needs of Asian nurses is important because the demographic findings of this study indicate a majority of Asian

(55.6%) critical care nurses in Hawaii and the survey results showed the lowest satisfaction score in family and work balance ($M = 3.10$) compared to all the other subscales of job satisfaction. In general, an awareness and understanding that a balance of family and work motivates critical care nurses based on specific socio-demographics is important for administration and for policy makers at any healthcare organization. Family and work balance as a motivational factor based on a majority of Asian nurses is useful to nursing leaders in recruitment of Asian nurses and in promoting nurse retention.

Praise and Recognition

Praise and recognition were motivating factors for critical care nurses in Hawaii who did not work night shifts. According to the MMSS tool the subscale of praise and recognition include (see Table 1) items of: immediate supervisor, opportunities to advance career, and recognition for work from the group and peers (Mueller & McCloskey, 1990). Past studies indicated praise and recognition as predictors of nurse retention (Wilson, 2006). The current study has indicated a specific socio-demographic of shift worked to have a relationship to praise and recognition.

Based on the results of the current study, nurse managers should consider providing ongoing praise and recognition to the day shift nurses. Managers may not be routinely around during the evening and night shift. A plan to address and eliminate barriers along with a sincere commitment by nurse managers to show praise and recognition for nurses on rotating and night shift will subsequently improve patient care outcomes by creating a healthy work environment. Higher number of positive patient care outcomes may be seen with a healthy work environment (Codier et al., 2008; Meraviglia, 2009).

Leaders can enhance employee job satisfaction by taking the time to recognize individual value and contribution to the unit by nurses who work rotating and night shifts. According to Robinson (2001), a culture within a healthcare organization that values nurses will promote retention. Quite possibly in this study praise and recognition may not have been an influencing factor for the night shift critical care nurses because nurse managers are commonly not around at night. In addition, day shift nurses may be communicating more with nurse managers on the progress of the unit compared to night shift nurses and as a result may receive praise and recognition. Recognition of nurses creates a healthy work setting (Grossman, 2009) and the current study has implications for nurse managers to consider taking the time to make more frequent visits and show greater appreciation for night and rotating nurses because nurses require a healthy working environment for productive nursing practice.

Coworkers

The coworkers who work regularly in a critical care units serve as motivating factors of job satisfaction for nurses who have fewer years of experience in the current hospital, lower household income, and those who work the ER. Coworkers in this study refer to nursing peers and physicians on the critical care unit (see Table 1). The nurses in the ER may have a sense of support and teamwork for patient care with usual coworkers present. This may be specifically true for nurses with a lesser experience level.

ER nurses may find coworkers to be a motivating factor because working with familiar staff may be more productive for patient care in a busy critical care environment. Implications to nursing management are based on reconsidering floating ER nurses to other units or hiring agency nurses to work the ER which may result in poor patient

outcomes generated by poor motivation of ER nurses to work with unusual coworkers. The findings add to the body of knowledge on the specific work environment factors that influence job satisfaction of the critical care nurse based on specific socio-demographics

Interaction Opportunities

Opportunities for interaction in the critical care unit were motivating factors for critical care nurses in Hawaii specifically for those nurses who did not work the night or rotating shift, and had fewer years of experience at the current hospital. According to the MMSS tool the following items reflect on interaction opportunities (see Table 1): delivery of care on the unit, opportunities for social contact at and after work, and opportunities to interact with other disciplines (Muller & McCloskey, 1990). Improving communication in the critical care unit promotes interaction opportunities.

The night shift may not have as many interaction opportunities within the critical work settings compared to the day shift. Rudman and Gumbita (1995) found environmental factors created internal conflict and attention to them was found to be vital to job satisfaction and subsequent commitment among nurses. The influence of leadership to improve work settings in respect to communication and interaction among nurses has implications to improving job satisfaction among nurses. Opportunities for interaction will improve motivation to work and present better patient care outcomes, improved retention and a positive work environment. Implications to recruitment are evident with the relationship identified between fewer years of experience at the current hospital and interaction opportunities.

Professional Opportunities

The present study indicated professional opportunities were not a motivating for nurses in critical care units. According to the MMSS tool (see Table 1), professional opportunities include research opportunities, positive feedback and encouragement, and opportunities to interact with faculty from a school of nursing (Mueller & McCloskey, 1990). Nurses in critical care in Hawaii had the second lowest job satisfaction score for professional opportunities. Findings of the current study can be compared to other studies with the MMSS tool with implications on patient care.

Previous studies have indicated the demands of highly efficient care combined with poor opportunities for professional advancement to result in burn out of critical care nurses (Davies, 2008). Across cultures, job satisfaction related to professional opportunities was also low for British nurses (Price, 2002) while Hong Kong nurses were known to be dissatisfied with opportunities to publish (Leung, et al., 2007). Considering the possibility of burn out, the professional opportunities subscale of job satisfaction has implications for hospital administration to create policies that address work motivation for critical care nurses. Providing ongoing professional opportunities may impact job satisfaction among nurses and in turn promote retention (Poter-Wenzlaff, & Froman, 2008). In light of the rising nurse faculty shortage (AACN, 2009a), promoting an interaction with faculty may influence critical care nurses to consider the educational field of nursing in addition to clinical practice.

The current study may not have revealed a correlation of professional opportunities to night nurses possibly because of lower opportunities during the night. Professional opportunities have implications for the night shift and could work as a

motivational factor. The current study implies the importance of improving professional opportunities for night nurses and those with rotating shifts in critical care. Nurses work on providing efficient care and a lack of personal growth with unmet needs could affect their commitment to the critical care setting. Improving the job satisfaction will increase retention of nurses as well as promote effective patient care in the critical care unit.

Control and Responsibility

Control and responsibility at work for nurses based on socio-demographics of lower household income and fewer years of experience in critical care nursing, predicted the job satisfaction level of critical care nurses in Hawaii. For critical care nurses in Hawaii the subscale of control and responsibility ranked seventh for job satisfaction among the eight subscales. According the MMSS tool, aspects of control and responsibility (see Table 1) for the critical care nurse include: opportunities to belong to the unit or a specific committee, ability to control work settings with relevant input, and involvement in major decisions for the unit. Reduced autonomy in areas of work among nurses has been found to result in decreased job satisfaction levels (Zydziunaite & Katiliute, 2007).

Previous studies indicate the control and responsibility subscale of job satisfaction as a motivational factor to be low across cultures (Price, 2002). Based on the findings of the current study where fewer years of experience among critical care nurses predicted job satisfaction in terms of control and responsibility, implications are created for the nurse managers and those involved in administrative policies to address such areas. This study implies the need for providing more control and responsibility to newer nurses instead of mainly keeping the emphasis on increasing responsibility among experienced

nurses. If administration creates policies to increase the involvement of critical care nurses in decision-making for the critical care unit, the psychological need for self actualization is met based on Maslow's motivational theory (Muller & McCloskey, 1990). By meeting the needs of critical care nurses the motivation to work increases, resulting in positive outcomes on commitment, retention and patient safety.

Nurses with lower incomes and fewer years of experience are motivated to work in critical care with an increase in control and responsibility. Increased motivation to work will result in better patient outcomes. When nurses are motivated to work, they may experience a lower stress level. Specialized units like the intensive care unit or the emergency room may induce stress for the critical care nurses arising from factors of ethical situations, new patient care practices, technological changes, and challenging care (Braithwaite, 2008). Awareness among charge nurses and unit managers of the impact of control and responsibility on the psychological wellbeing of nurses, aids in understanding additional stress factors.

Organization

This current study on the job-satisfaction of nurses identified areas of satisfaction and dissatisfaction. Areas with a low job satisfaction level such as involvement in decision-making, control over changes in the critical care unit, and professional opportunities, have implications for management and administration. These areas of psychological satisfaction motivate nurses to work. Organizations should also consider dissatisfaction of critical care nurses in childcare facilities and compensation for working weekends, which will have an impact on retention because they have significance to the basic need of safety (Mueller & McCloskey, 1990).

Results indicated specific socio-demographic variables to predict subscales of job satisfaction for critical care nurses. The knowledge on job satisfaction areas and on particular socio-demographics influencing job satisfaction is useful to nurse managers, educators, and administration personnel. to create strategies directed at improving job satisfaction among critical care nurses. The information obtained contributed to the knowledge and understanding of present nurse leaders in Hawaii and future leaders in developing effective strategies for improving job satisfaction and promoting retention of employees in an ethnically diverse population. A shortage of nurses creates financial losses to the health organization and produces poor patient outcomes (Haut et al., 2006). A healthy work environment is created by satisfied critical care nurses with additional implications to safe patient care.

In addition, the nursing work environment and the burn out experienced by nurses' plays a significant role in patient safety (Braithwaite, 2008; Laschinger & Leiter, 2006). Nurses dissatisfied in their jobs because of the influence of personal socio-demographic factors will be less productive and under greater stress. Past studies have identified personal factors to influence stress among nurses (Kane, 2009). Considering patient and nurse safety, health care organizations should take necessary steps to improve retention efforts by working on job satisfaction issues among critical care nurses.

The information obtained from the current study may be valuable to nurse leaders involved in recruitment of new critical care nurses in health care organizations. The results could assist educational leaders to develop strategies in promoting job satisfaction of new nurses, influencing nurse commitment and promoting patient safety within the critical care units. Leaders working toward improving nurse job satisfaction can enhance

nurse job performance, which may in return improve quality of patient care and cost effectiveness for the organization. These conclusions positively impact the Hawaii nurse shortage.

Recommendations to Leadership

The present study indicated the presence of a relationship between nurse socio-demographics and the subscales of job satisfaction among critical care nurses in Hawaii. The existence of a relationship provides an opportunity to nurse managers, educators, administrators, and other leaders in healthcare to provide an environment of leadership that is conducive to the unique socio-demographics of critical care nurses. Recommendations for leaders and for future research are presented to promote safe patient care in critical care units through retention and reduced shortage of critical care nurses.

Consideration for Ethnicity-based Needs

A total of 55.6% of critical care nurses in Hawaii were found to be Asians, forming a large majority. Results of the present study highlight socio-demographics of culture among critical care nurses predicting subscales of job satisfaction. Specific to the Asian population, a balance of family and work was a motivating factor in the current study.

In this study, the lowest level of satisfaction was seen in the balance of family and work subscale of job satisfaction from the MMSS. In addition, a balance of family and work is a basic safety need based on Maslow's hierarchy of needs (Mueller & McCloskey, 1990). According to the MMSS, a balance of family and work relates to: opportunities for part-time work, childcare facilities and maternity leave. These three

items may be very valuable for the Asian critical care nurse and the current study indicated a level of dissatisfaction for the item on childcare facilities (see Table 4).

According to Herzberg's motivational theory (1966), fulfilling safety needs increases motivation to work. If the basic needs of safety are not met the critical care RN may not foster a spirit to meet the next need in Maslow's (1954) hierarchy of needs. Nursing managers in critical care should continue the current practice of flexible scheduling. Efforts should also be directed to maintain a balance of family and work for the critical care nurse.

Attention of accreditation agencies and the Hawaii Nurses Association could be directed toward the specific needs of Asian critical care nurses, because a balance of family and work for these nurses was found to be a motivating factor to work. A balance of family and work is attained by increasing childcare facilities, providing more opportunities for part-time work and improvement in maternity leave for the critical care nurse (Mueller & McCloskey, 1990). Accommodating the need for childcare facilities, additional opportunities for part-time work, and improvement in maternity leave. will support the balance of family and work for the Asian critical care nurse.

In addition, results on non-Caucasian nurses provide important data on ethnicity factors. The non-Caucasian socio-demographic variable was not statistically significant at the $p < .05$ level for scheduling but the probability was at <.10 indicating avenues for future research (see Table 7). The lifestyle of non-Caucasian nurses may make it necessary for them to have flexible scheduling. Findings of this study may apply to the non-Caucasian nurses who in the current study were mostly of the Asian culture and these findings could be researched further. Other findings based on flexible scheduling

indicated the need to continue present practice of flexible scheduling among critical care nurses in Hawaii.

Continuing Flexible Scheduling

For Hawaii, the level of job satisfaction in scheduling was the highest among the 31 job satisfaction items of the MMSS (see Table 4). This study also indicated flexible scheduling to be a motivating factor of job satisfaction for nurses who were married, Caucasian, worked the day shift, had fewer years of experience, and for nurses working in the ER. Recommendations for critical care nursing managers include continuing efforts to promote self-scheduling instead of management staff taking control of scheduling for critical care nurses. Consideration in flexible scheduling should be given to nurses who are married or work the day shift because they may have to juggle their schedule to meet their family needs.

Compensation for Working Weekends

Recommendations for accreditation agencies and the Hawaii Nurses Association are to work with hospital administration on providing compensation to critical care nurses for working weekends. Nurses in critical care were dissatisfied with the item of compensation for working weekends on the MMSS tool. Replacing critical care nurses is difficult (Robinson, 2001) resulting from the current nurse shortage (HSCN, 2008) and related to the need for specialized training to work in critical care. Knowledge on the areas of dissatisfaction should be taken seriously by hospital administration to reduce nurse attrition. To reduce losses, emphasis of policies and procedures in the work settings directed at meeting job satisfaction would assist nurses to meet their personal and organizational goals and in creating a healthy workplace in the critical care setting.

Improving Social Work Environment

A healthy work environment can be created by using creative strategies for a social work environment among critical care nurses based on findings of the present study. Coworkers, interaction opportunities, and praise and recognition fulfill the social needs based on Maslow hierarchy of needs (Mueller & McCloskey, 1990). Usual coworkers and interaction opportunities in the critical care unit were found to be motivational factors for nurses in the critical care unit. Cross training nurses to different units and floating them based on unit's need is not recommended because nurses are faced with unusual coworkers. Floating or cross training nurses before they acquire adequate years of experience and a level of comfort in patient care may reduce their motivation to work.

When critical care nurses float to medical surgical units or telemetry units, they may be faced with unfamiliar coworkers and interaction opportunities may not be the same. When critical care units are understaffed, working with agency nurses may be stressful for the critical care nurse. Nurses with a lower experience level will be more productive and have a lower stress level when working with usual peers and physicians around. One of the most important aspects of consideration includes patient safety, which is enhanced by increased nurse productivity resulting from working with usual coworkers. Working with unusual peers and physicians has an impact on work motivation and may create issues with organizational commitment.

In addition, because the subscale of coworkers was found to be a factor of motivation for the ER nurses, hospital administration should consider policies and strategies to avoid ER nurses being floated and reducing use of agency nurses in the ER.

Consideration should also be given to allow inexperienced nurses to work with usual coworkers in the critical care setting. Cross training ER nurses who have fewer years of experience in critical care and floating them to different units as need arises may reduce job satisfaction.

Charge nurses are encouraged to staff critical care units adequately and to report issues in patient care based on using use of agency or floating nurses. ER managers should avoid depending excessively on agency nurses for the ER and could consider hiring more regular part-time or full-time nurses. The coworkers increase the job satisfaction of nurses in the critical care unit. Nurses working in a critical care environment will benefit from efforts taken by nursing leaders in promoting a workplace where there is high emphasis on patient safety through nurse job satisfaction. In addition, the unique needs of the night shift nurse should be addressed.

Consideration for Rotating and Night Shift Nurses

Two subscales of job satisfaction from the MMSS were found to be motivating factors of job satisfaction for the day shift nurses and those nurses who did not work the night shift. The socio-demographic variable of shift worked, specifically the day shift, predicted job satisfaction for the subscales of scheduling and interaction opportunities. Results indicate these subscales of job satisfaction are motivational to day shift nurses and a recommendation for critical care nurse managers would be to continue interaction opportunities, if any, for day shift nurses and direct attention to meeting the needs of the night nurses based on these job satisfaction subscales. Consideration should be given to increased interaction opportunities, which according to Mueller and McCloskey (1990)

includes: interaction with other disciplines, increased opportunities in delivery of care and social contacts in and outside the organization related to healthcare.

Providing night nurses with interaction opportunities either at night or during their day-off would be useful in meeting their social needs resulting in increased job satisfaction, indicates Muller and McCloskey (1990). Managers in nursing usually work during the day shift. Praise and recognition were also found to motivate nurses who did not work the night shift, leading to recommendations for nursing managers to make time to visit the night shift nurses to praise and recognize deserving nurses for their work, which in return assists in meeting their social needs. Leadership should be directed toward significant motivational factors that have been explored in this study. .

Recruiting and Managing New Nurses

Three subscales of job satisfaction from the MMSS were found to be major motivational factors of job satisfaction based on nurses who had fewer years of experience in the current hospital. These motivators included scheduling, coworkers and interaction opportunities. The findings of the current study suggested that nurses who had worked more years at the current hospital had lower coworkers scores ($r = -.30$, $p < .001$). In addition, the control and responsibility subscale of job satisfaction from the MMSS was motivational to critical care nurses based on fewer years of experience in the field of critical care nursing. Findings suggest newer nurses are highly motivated to work and the lower experience level of the critical care nurse predicted job satisfaction of the critical care nurse.

Nurses who had fewer years of experience at the current hospital had a relationship to three of the eight subscales of job satisfaction and a recommendation to

nurse-recruiters is to re-consider hiring registered nurses into critical care solely on seniority within the hospital, and to consider nurse applicants transferring from other hospitals. The information obtained from the current study may be valuable to nurse leaders involved in recruitment of new critical care nurses. The results could assist educational leaders in developing strategies to promote job satisfaction of new nurses, influence nurse commitment and promote patient safety within the critical care units.

The present study also indicated that the subscale of control and responsibility based on fewer years of experience and lower household income was a motivation factor for job satisfaction. This finding could be influenced by the possibility that new nurses may not be given enough control and responsibility. A lesser amount of responsibility could have increased their job satisfaction level.

According to Maslow (1954) and Herzberg (1966) meeting the psychological need of self actualization promotes motivation to work. The psychological need for self actualization is attained through professional opportunities and with control and responsibility (Mueller & McCloskey, 1990) in the critical care work settings. Professional opportunities had no relationship to socio-demographics. Because the control and responsibility subscale were motivational factors, a recommendation would be to increase the control and responsibility given to experienced nurses by encouraging input on nurse development, involvement in decisions-making for the critical care unit, and increasing nurse's role in providing professional opportunities for newer critical care nurses.

Nursing Education in Critical Care

Educational leadership has implications in light of the results of this study, which indicated subscales of job satisfaction were motivating factors for nurses with fewer years of experience. New graduates and those with a lower level of experience may probably be younger nurses who were motivated to work. Based on the current findings a recommendation for clinical nurse specialist and nursing educators in the hospitals is to offer critical care educational programs for new nurse graduates and to those with lower years of experience in the current hospital or in critical care. This recommendation is in contradiction to past studies which indicated younger nurses between the ages of 20-40 had poor job satisfaction and were more likely to leave (Shader, et al., 2001).

Further implications to nursing educational leadership and curriculum are based on the relevant findings of this study. If critical care nursing is introduced as part of the curriculum for the nursing program at some universities in Hawaii, a recommendation would be to share results of this study with those students. Students should be made aware of the unique socio-demographics of Hawaii critical care nurses that predict job satisfaction and the current findings on job satisfaction levels in critical care nursing. Graduate nurses may also be attracted to critical care nursing because job satisfaction was seen in all eight subscales satisfaction of the MMSS. Promoting a positive attitude towards critical care nursing among nursing students may increase the number of applicants into new graduate critical care programs.

Nurses who had fewer years of experience predicted the job satisfaction of critical care nurses. An awareness of the positive influence of nurses with fewer years of experience either in critical care or at the current hospital may attract new graduates and

other in-experienced nurses to critical care nursing resulting in possible reduction of the critical care nurse shortage. From an educational leadership perspective, nursing leaders in health care organizations involved in the training of critical care nurses should use the results of this study to develop strategies in promoting job satisfaction of new nurses, influencing nurse commitment, and promoting patient safety within the critical care units. Besides teaching content on skills and patient care in the critical care unit, explaining predictions based on socio-demographics and work settings may be helpful. Nurse-clinicians and clinical nurse specialists can influence the placement of nurses to critical care units by mentoring based on findings of specific socio-demographics that impact job satisfaction. A mentoring relationship was shown to have a higher job satisfaction acknowledgment in a study done on clinical nurse specialists (Caine, 1989).

Educators involved in teaching the master's in nursing program with an emphasis on leadership could use the results of this study as a guide to leadership in critical care nursing. This study also revealed a very low level of job satisfaction in professional opportunities for critical care nurse. In light of the shortage in nursing educational leadership (AACN, 2009b), recommendations are to improve professional opportunities for the critical care nurses. Increasing contact of critical care nurses with nursing faculty may foster a spirit of interest in nursing education.

Focus on Leadership in Critical Care

Every nurse has a personal life with unique socio-demographics influencing individual performance at work. The critical care nurse is also faced with a stressful work environment. Meeting the needs of the nurses will promote motivation to work as identified by Herzberg (1966) and Maslow (1954). Promoting subscales of job

satisfaction based on specifically identified socio-demographics will improve job satisfaction and subsequent retention.

The results of this study indicate subscales of job satisfaction based on socio-demographics have an influence on job satisfaction. Seven socio-demographics to include: marital status, shift worked, years of experience in current hospital, years of experience in critical care, area of work, cultural background, and household income, had an impact on the subscales of job satisfaction. Becoming familiar with the special socio-demographics of nurses in critical care is the primary step for leaders in nursing. Hospital administration would benefit from efforts used to promote the development of leadership behaviors among nurse-managers that address significant job satisfaction subscales based on unique socio-demographics of critical care nurses.

A recommendation for managers in nursing would be to take interest in creating strategies that address the six subscales of satisfaction which are highly influenced by nurse socio-demographics of the critical care nurse. An authentic leader goes beyond basic duties to include personal commitment, dedication, and values aimed at promoting healthy work settings (Shirey, 2006). Nurses working in a critical care environment may benefit from efforts taken by nursing leaders in promoting a workplace with high emphasis on patient safety through nurse job satisfaction.

Effective planning and management of areas of job dissatisfaction is highly encouraged. Research has revealed the importance of making work setting changes using support, adequate time, and with input from all stakeholders including nurse managers in critical care (Bles et al., 2008). Input from critical care nurses for changes in work setting is useful. Involving nurses in decisions for the unit or in patient care, meets the

psychological need of self actualization based on Maslow's motivational theory (Mueller & McCloskey, 1990). Leaders can also use the knowledge gained from this study to reflect on how poor motivation can result in absences from work among critical care nurses. Overall, the administration in health care organizations should address the impact of poor nurse job satisfaction on the productivity, patient outcomes, length of stay for patients, and cost to the organization by designing innovative strategies.

Extrinsic rewards provided by a health care organization have an influence on family needs. The findings of this study ruled out 'extrinsic rewards' to have a significant relationship to any of the 10 socio-demographics of the critical care nurse. The critical care nurses had a moderate level of job satisfaction with extrinsic rewards (see Table 5). In addition the socio-demographic variable of salary did not predict any of the subscales of job satisfaction. Offering an increase solely in extrinsic rewards may be futile in terms of improving job satisfaction because there was no relationship of socio-demographics to the subscale of extrinsic rewards. Instead a focus of leadership on work related areas of job satisfaction for critical care nurses is recommended based on findings of this study.

Another recommendation is to have accreditation agencies for standard nursing practice collaborate with administrative leaders at the hospital level to incorporate specific leadership behaviors into job requirements that address the six significant subscales of job satisfaction to include: flexible scheduling, balance of family and work, praise and recognition, coworkers, interaction opportunities, and control and responsibility. Addressing the job satisfaction subscales is encouraged as a leadership framework to foster healthy work settings in critical care nursing. According to the current study, six subscales of job satisfaction help to meet the social, psychological, and

safety needs of the critical care nurse based on specific socio-demographics. Meeting these needs increases motivation to work (Herzberg, 1966; Maslow, 1954), improves productivity of nurses and reduces cost of care.

Future Research

The results of the current study indicated the presence of a relationship between socio-demographics and six subscales of job satisfaction. A few socio- demographic variables as identified in Table 7, 8, 10, 11, and 12 were not statistically significant at the $p < .05$ level for the subscales of job satisfaction but the probability was at <.10 indicating avenues for future research. The current study provided an improved understanding of the motivational factors for job satisfaction based on critical care nurse socio-demographics. A correlational study explains the presence of a relationship but does not indicate a cause and effect (Creswell, 2005).

Recommendations for future research include conducting a qualitative study to explore the specific behaviors of critical care nurses with the same socio-demographic variables discussed in this study. A qualitative study may indicate how these specific socio-demographics impact job satisfaction of critical care nurses. Through an inquiry in a qualitative study, the creation of specific themes based on personal experiences and individual perceptions may explain factors that affect the motivation of nurses, resulting in an influence on job satisfaction and retention.

For example, the job satisfaction based on the scheduling subscale of satisfaction was higher for critical care nurses who were married, worked the day shift, had fewer years at the current hospital, and worked in the ER. Quantitative data on these socio-demographics yielded a score on the Likert-type scale based on the number of nurses who

participated in the study without any information on why and what impacted job satisfaction. Knowledge gained on the specific behaviors of these critical care nurses will shed light on the significance of flexible scheduling on the lives of critical care nurses. A qualitative study will provide more detailed information beyond the basic knowledge on socio-demographics impacting critical care nurse job satisfaction.

The additional data collected will be useful to leaders in healthcare to conduct educational training both for critical care nurses and management staff with high emphasis on improving job satisfaction for nurses. A qualitative study will also provide an opportunity for nurses to provide more details on their responses. Nurses can verbalize through interviews how flexible scheduling becomes a motivating factor for job satisfaction and retention. After data was collected a few critical care nurses recommended that an area for comments should have been included in the MMSS form. A qualitative method of research is highly recommended to enrich and broaden the knowledge of factors affecting job satisfaction for critical care nurses in the state of Hawaii.

Hawaii is a state with high cultural diversity among nurses and the present study indicated that 55.6% of critical care nurses were Asian at the three major hospitals on Oahu. Another recommendation would be to explore if a relationship existed with the perceived leadership style of the critical care unit manager and level of organizational commitment experienced by Asian nurses. Knowledge on the relationship will provide data to leaders and administrators to develop leadership behaviors welcomed by Asian nurses. Evidence suggests that a nurse manager's leadership style affects the job satisfaction among nurses (Cummings et al., 2008; Sellgren, et al., 2008). If leadership is

experienced positively, Asian nurses are more likely to remain committed to the organizations, resulting in reduced demand and shortage of critical care nurses.

Another recommendation is to replicate this study in pediatric critical care nursing or a critical care unit in another U.S. state to compare the relationship of socio-demographics to subscales of satisfaction specific to pediatric critical care nurses or a critical care unit in a geographically different site. A replication of this study will permit a comparison to the current study and increase knowledge on the influences of specific socio-demographics that remain unchanged for a different critical care settings. The challenges of caring for children in critical care nursing may not be the same as those among adult patients. In addition, the socio-demographic variables in a new setting may widely vary in comparison to Hawaii. A replication will also indicate whether all the eight subscales of satisfaction from the MMSS based on the 10 socio-demographics of this study have an influence to job satisfaction for critical care nurses working in different critical care settings or in a new location.

An ethnographic study is also recommended in comparing the organizational culture specific to the critical care nursing environment in a magnet status versus a non-magnet status hospital with resulting implications to job satisfaction. Ethnographic studies provide avenues for exploring issues and relationships through observations of participants in a realistic organizational environment (Kortens, 1999). Observations made in the critical care unit that indicate a specific culture affecting job satisfaction may add to the body of knowledge

In addition, future research studies in examining motivational factors based on additional socio-demographics that impact job satisfaction in other acute care units, long-

term care, and community health care nursing, may be useful. Discovering that level of job satisfaction among nurses in many different areas of nursing may direct the attention of leaders to create strategies in addressing specific motivational factors that improve job satisfaction. Job satisfaction in critical care will reduce retention issues and the current overall shortage of nurses.

Summary

The shortage of critical care nurses is high both in Hawaii (HSCN, 2008) and nationally (Carr, 2009). The demand for critical care nurses is increasing (Carr). The literature documented the high stress level and demands placed on critical care nurses (Cawthorn & Rybak, 2008). Job satisfaction among critical care nurses is crucial to reducing the existing demand and shortage. A correlational research design was used to quantify the level of job satisfaction among critical are nurses and find specific socio-demographics predicting satisfaction.

The current study identified a moderate level of job satisfaction among critical care nurses in Hawaii and nurses were satisfied in all eight subscales of satisfaction from the MMSS instrument. The current study indicated low levels of job satisfaction in professional opportunities at work, amount of control and responsibility given to critical care nurses and in a balance of family and work. Six job satisfaction subscales increased the motivation to work based on a specific socio-demographic profile. The findings of this study identified seven socio-demographics to predict the six subscales of satisfaction for critical care nurses in Hawaii.

The results of this study added to the limited body of knowledge on currently practicing critical care nurses in Hawaii and provided information on their motivation

influenced by specific socio-demographics. In the literature reviewed for this study no other study was found on the relationship between socio-demographics and job satisfaction among critical care nurses in Hawaii. The results also added to the literature by identifying work related conditions that reflect on the highest and lowest job satisfaction items for the critical care nurse with a specific socio-demographic profile as seen in Hawaii. The results of this study may guide plans for retention, recruitment, organizational commitment and nursing practice in critical care settings.

Recommendations are made to leaders in health care organization to promote leadership behaviors with high relevance to the subscales of job satisfaction from the MMSS. Suggestions are made for consideration of: ethnicity-based needs, compensation for working weekends, providing a social work environment, hiring new critical care nurses, and needs of the night and rotating nurses. Educational leadership implications are relevant to educators involved in the senior level of nursing education and those involved in critical care training programs for nurses. Suggestions are also made to give consideration to specific socio-demographics of the critical care nurse predicting six different subscales of job satisfaction. Future research in areas of critical care nursing is recommended with a focus on improving job satisfaction of nurses both nationally and globally.

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APPENDIX A: SOCIO-DEMOGRAPHIC DATA

Instructions: Please complete the following demographic data by the circling the appropriate response about yourself.

Marital status**:** 1. Single 2. Married 3. Separated/Divorced 4. Widowed

Shift worked*:* 1. Day only 2. Evening only 3. Night only 4. Rotating

Average hours worked per week:

a. <10 hours b. 10-20 hours c. 21-30 hours d. 31-39 hours e. > 40 hours

Highest level of education*:*

1. Diploma in Nursing 2. Associate degree, nursing

3. Baccalaureate degree, nursing 4. Baccalaureate degree, other

5. Masters degree, nursing. 6. Masters degree, other

7. Doctoral degree, nursing 8. Doctoral degree, other.

Years of Experience as a critical care RN: _____

Years of Experience in current hospital _____

Area of Work: a. ER b. ICU c. CCU d. Other: _____

Cultural Group:

1. Asian 2. African American 3. Caucasian

4. Native Hawaiian /& Pacific Islander 5. Two or more races

6. Hispanic or Latino 6. American Indian/Native Alaskan 7. Other.

Salary*:*

a. <49,000 b. 50,000 – 74,999 c. 75,000 – 99,000 d. 100,000-150, 000 e. >150,000

Household income

a. < 49,999 b. 50,000 – 74,999 c. 75,000 – 99,000 d.100, 000-150,000 e. >150,000

APPENDIX B: MCCLOSKEY/MUELLER SATISFACTION SCALE

How satisfied are you with the following aspects of your current job?

Please circle the number that applies.

		Very Satisfied	Moderately Satisfied	Neither Satisfied nor Dissatisfied	Moderately Dissatisfied	Very Dissatisfied
1.	salary	5	4	3	2	1
2.	vacation	5	4	3	2	1
3.	benefits package (insurance, retirement)	5	4	3	2	1
4.	hours that you work	5	4	3	2	1
5.	flexibility in scheduling your hours	5	4	3	2	1
6.	opportunity to work straight days	5	4	3	2	1
7.	opportunity for part-time work	5	4	3	2	1
8.	weekends off per month	5	4	3	2	1
9.	flexibility in scheduling your weekends off	5	4	3	2	1
10.	compensation for working weekends	5	4	3	2	1
11.	maternity leave time	5	4	3	2	1
12.	child care facilities	5	4	3	2	1
13.	your immediate supervisor	5	4	3	2	1
14.	your nursing peers	5	4	3	2	1

		Very Satisfied	Moderately Satisfied	Neither Satisfied nor Dissatisfied	Moderately Dissatisfied	Very Dissatisfied
15.	the physicians you work with	5	4	3	2	1
16.	the delivery of care method used on your unit (e.g. functional, team, primary)	5	4	3	2	1
17.	opportunities for social contact at work	5	4	3	2	1
18.	opportunities for social contact with your colleagues after work	5	4	3	2	1
19.	opportunities to interact professionally with other disciplines	5	4	3	2	1
20.	opportunities to interact with faculty of the College of Nursing	5	4	3	2	1
21.	opportunities to belong to department and institutional committees	5	4	3	2	
22.	control over what goes on in your work setting	5	4	3	2	1
23.	opportunities for career advancement	5	4	3	2	1
24.	recognition for your work from superiors	5	4	3	2	1

		Very Satisfied	Moderately Satisfied	Neither Satisfied nor Dissatisfied	Moderately Dissatisfied	Very Dissatisfied
25.	recognition of your work from peers	5	4	3	2	1
26.	amount of encouragement and positive feedback	5	4	3	2	1
27.	opportunities to participate in nursing research	5	4	3	2	1
28.	opportunities to write and publish	5	4	3	2	1
29.	your amount of responsibility	5	4	3	2	1
30.	your control over work conditions	5	4	3	2	1
31.	your participa-tion in organizational decision making	5	4	3	2	1

APPENDIX C: LETTER OF INTRODUCTION

[redacted]
Hawaii [redacted]
July 26, 2009

Dear Colleague in Critical Care Nursing:

I am a doctoral student completing my Doctorate in Educational Leadership at the University of Phoenix Online program. I am presently doing a study on job satisfaction of critical care nurses in the state of Hawaii. The purpose of the study is to quantify the level of satisfaction and to gain an understanding of the relationship between job satisfaction and nurse socio-demographics of critical care nurses. Having an understanding of the relationship will have implications for managers, administrators, educators and supervisors in nursing to clarify demographic influences to job satisfaction and promote improved critical care work environments with resulting influence to the commitment of nurses. This study will further have impact on critical care nurse shortage in Hawaii.
I am requesting your voluntary participation which will be highly appreciated. If you decide to participate you will need to complete the attached demographic form of 10 questions followed by a questionnaire that includes 31 questions. The process should take 15 minutes or less. There are no foreseeable risks to you for participation. Your data will remain anonymous and confidential. Responses cannot be connected to any given individual.

Please call me at [redacted] or email me at mystudentsrock@hotmail.com for any questions. You could also contact my mentor Dr. Raj Singh at (951) 295 8307 or at rsingh@email.phoenix.edu. I thank you for your support.

Sincerely,

Hazel Downing

Hazel Downing, RN, MN
Doctoral Candidate, Doctor of Education
University of Phoenix Online

APPENDIX D: INFORMED CONSENT

Participants of 18 years and older

Dear Participant,

I am Hazel Downing, a doctoral student at the University of Phoenix Online completing my Doctorate in Education. I am conducting a research study on the job satisfaction of critical care nurses in Hawaii. The purpose of the study to quantify the level of satisfaction among nurses and to explain the relationship, if any, between job satisfaction and socio-demographics of nurses in HI with resulting implications of promoting nurses work commitment.

There are no direct benefits to you for completing the study although the result of this study will have implications for critical care nursing educators, supervisors, managers and administrators in understanding influences on the job satisfaction of critical care nurse. Improving job satisfaction of current Hawaii critical care nurses will increase their commitment and reduce the shortage in critical care nursing.

You will complete a questionnaire of 10 questions on demographics and 31 questions on job satisfaction attributes which may take 15 minutes or less. Your participation is voluntary and if you choose not to participate or to withdraw from the study there will be no risks, penalty or loss of benefit to you. You may choose to decline or withdraw to participate at any time and leave without consequences or questioning. Your name will remain anonymous although the results of the study may be published. Your identity will remain confidential and your name will not be disclosed to any outside party. There are no foreseeable risks to you for your participation in the study.

If you have any questions concerning the research study, please call me at 808 [redacted] or at mystudentsrock@hotmail.com

As a participant in this study, you should understand the following:

1. You may decline to participate or withdraw from participation at any time without consequences.
2. Your identity will be kept confidential.
3. Hazel Downing, the researcher, has thoroughly explained the parameters of the research study and all of your questions and concerns have been addressed.
4. Data will be stored in a secure and locked area. The data will be held for a period of three years, and then destroyed.
5. The research results will be used for publication.

"By signing this form you acknowledge that you understand the nature of the study, the potential risks to you as a participant, and the means by which your identity will be kept confidential. Your signature on this form also indicates that you are 18 years old or older and that you give your permission to voluntarily serve as a participant in the study described."

Signature of the interviewee:_____Date_____

Signature of the researcher:_____Date_____

APPENDIX E: INFORMATION SHEET MEDICAL CENTER Z

Nurse Information Sheet for [redacted] Medical Center

University of Phoenix
A Quantitative Correlation Study of Job Satisfaction of Critical Care Nurses in Hawaii
PI: Hazel Downing, RN, MN

Purpose:
The purpose of the research study is to quantify the level of satisfaction and establish a relationship between job satisfaction and socio-demographics of critical care nurses in Hawaii which will have implications to promote nurses work commitment in the critical care units. The nurse managers of each of your units (ER, Neuro ICU, Medical ICU, and Surgical ICU) have agreed that I may talk with you about this study.

Procedures:
Your participation will involve completing a questionnaire of 10 questions on demographics and 31 questions on job satisfaction attributes which may take 15 minutes or less. Do not write your name on the survey; I do not need to know who answered the surveys. Once you are done please place the survey in the box anytime during your shift. The box will be placed in the nurse's lounge. In appreciation for your time and effort in taking part in this study, please help yourself to the meal provided by this study.

Confidentiality
The results of the research study may be published, but individual answers to surveys will not be shared with managers or administrators. Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, you can do so without penalty or loss of benefit to yourself.

Risks or Benefits
In this research, there are no foreseeable risks to you.
Although there may be no direct benefit to you, a possible benefit of your participation will be for critical care nursing educators, supervisors, managers and administrators in understanding correlations of demographics and work settings to attributes of job satisfaction of critical care nurses. Improving job satisfaction of current Hawaii critical care nurses may increase their commitment and reduce the shortage in critical care nursing. The study may also have implications that will positively impact the national shortage of nurses.

Who to Contact:
If you have any questions concerning your treatment, your rights as a volunteer or any other matter relating to this research study, please call me at [redacted] and/or at mystudentsrock@hotmail.com. If you cannot get satisfactory answers to your questions or you have comments or complaints about your treatment in this study, you may contact:
Research & Institutional Review Committee
[redacted] Medical Center
[redacted]
Phone: [redacted]

APPENDIX F: ALLIED HEALTH PERMISSION MEDICAL CENTER Z

[redacted]

May 18, 2009

Hazel J. Downing, RN, MN
[redacted]

Dear Ms. Downing:

Thank you for submitting your application for Allied Health Care Privileges (Research) at The [redacted] Medical Center.

It is my pleasure to inform you that effective July 9, 2009, your one year appointment at The [redacted] Medical Center as an Allied Health Professional has been approved through July 9, 2010. Allied Health Professional privileges must be reviewed annually. Please contact the [redacted] at least one month prior to the expiration date.

This approval is for the following study only:

> "*A quantitative co relational study on Job Satisfaction of critical care nurses in Hawaii*" PA-2009-015

If you need to be involved in another study, contact [redacted]

Please let me know if we can be of further assistance.

Regards,

[redacted]

[redacted]

APPENDIX G1: PERMISSION TO USE PREMISES MEDICAL CENTER X

Permission for premises: emergency room and the intensive care unit.

UNIVERSITY OF PHOENIX

PERMISSION TO USE PREMISES, NAME, AND/OR SUBJECTS

[redacted] **Medical Center** [redacted]

☑ I hereby authorize Hazel Downing, student of University of Phoenix, to use the premises (facility identified below) to conduct a study entitled Job Satisfaction of Critical Care Nurses in Hawaii.

☑ I hereby authorize Hazel Downing, student of University of Phoenix, to recruit subjects for participation to conduct a study entitled Job Satisfaction of Critical Care Nurses in Hawaii

☑ I do not authorize Hazel Downing, student of University of Phoenix, to use the name of the facility, organization, university, institution, or association identified above when publishing results from the study entitled Job Satisfaction of Critical Care Nurses in Hawaii

[redacted] **02/19/2009**

Signature

Name

[redacted] RN,

Unit Manager Emergency Room

[redacted]

UNIVERSITY OF PHOENIX

PERMISSION TO USE PREMISES, NAME, AND/OR SUBJECTS

[redacted] **Medical Center** [redacted]

☑ I hereby authorize Hazel Downing, student of University of Phoenix, to use the premises (facility identified below) to conduct a study entitled Job Satisfaction of Critical Care Nurses in Hawaii.

☑ I hereby authorize Hazel Downing, student of University of Phoenix, to recruit subjects for participation to conduct a study entitled Job Satisfaction of Critical Care Nurses in Hawaii

☑ I do not authorize Hazel Downing, student of University of Phoenix, to use the name of the facility, organization, university, institution, or association identified above when publishing results from the study entitled Job Satisfaction of Critical Care Nurses in Hawaii

[redacted] **02/19/2009**

Signature

Name

[redacted]

Unit Manager ICU

[redacted]

APPENDIX G2: PERMISSION TO USE PREMISES MEDICAL CENTER Y

Permission includes both emergency room and the intensive care unit.

UNIVERSITY OF PHOENIX

PERMISSION TO USE PREMISES, NAME, AND/OR SUBJECTS

[redacted] Medical Center [redacted]

☑ I hereby authorize Hazel Downing, student of University of Phoenix, to use the premises (facility identified below) to conduct a study entitled Job Satisfaction of Critical Care Nurses in Hawaii.

☑ I hereby authorize Hazel Downing, student of University of Phoenix, to recruit subjects for participation to conduct a study entitled Job Satisfaction of Critical Care Nurses in Hawaii

☐ I do not authorize Hazel Downing, student of University of Phoenix, to use the name of the facility, organization, university, institution, or association identified above when publishing results from the study entitled Job Satisfaction of Critical Care Nurses in Hawaii

[redacted] 02/17/2009

Signature

Name

[redacted] RN

Unit Manager Emergency Room/ICU

[redacted]

APPENDIX G3: PERMISSION TO USE PREMISES MEDICAL CENTER Z

Permission includes Emergency room and the three intensive care units.

UNIVERSITY OF PHOENIX

PERMISSION TO USE PREMISES, NAME, AND/OR SUBJECTS

[redacted] Medical Center

Date: April 2009

X I hereby authorize Hazel Downing, student of University of Phoenix, to use the premises (facility identified below) to conduct a study entitled Job Satisfaction of Critical Care Nurses in Hawaii pending submission of an Allied Health Priviieges application to the [redacted] Medical Center's [redacted] Nursing Institute.

X I hereby authorize Hazel Downing, student of University of Phoenix, to recruit subjects for participation to conduct a study entitled Job Satisfaction of Critical Care Nurses in Hawaii. Recruitment of participants (staff nurses) will be limited to those units whose Nurse Managers have signed a letter of support: MICU ([redacted]), SICU ([redacted]), Neuro ICU ([redacted]), Emergency Department.

X I do not authorize Hazel Downing, student of University of Phoenix, to use the name of the facility, organization, university, institution, or association identified above when publishing results from the study entitled Job Satisfaction of Critical Care Nurses in Hawaii

ANY PAPERS RESULTING FROM THIS RESEARCH MUST BE REVIEWED BY THE [redacted] MEDICAL CENTER'S [redacted] NURSING INSTITUTE PRIOR TO PUBLICATION.

[redacted] [redacted]

Signature Name

APPENDIX H1: LETTER OF COLLABORATION MEDICAL CENTER X

UNIVERSITY OF PHOENIX

LETTER OF COLLABORATION AMONG INSTITUTIONS

Date: **02/19/2009**

To: Office of the Provost/Institutional Review Board
University of Phoenix

This letter acknowledges that [redacted] is collaborating with Ms. Hazel Downing enrolled in the Doctorate of Education program at the University of Phoenix in conducting the study on job satisfaction of critical care nurses in Hawaii. We understand the purpose of this research is to determine the relationship of job satisfaction to nurse socio-demographics and work settings of part time/full time practicing critical care nurses working in the emergency room or intensive care unit nurses in Hawaii, and will be conducted under the supervision of Dr. Raj Singh, faculty mentor, from University of Phoenix.

This project will be an integral part of our institution/agency and will be conducted as a collaborative effort and will be part of our curriculum/research/data/service delivery model.

Sincerely,

[redacted]

APPENDIX H2: LETTER OF COLLABORATION MEDICAL CENTER Y

UNIVERSITY OF PHOENIX

LETTER OF COLLABORATION AMONG INSTITUTIONS

Date: **02/17/2009**

To: Office of the Provost/Institutional Review Board
University of Phoenix

This letter acknowledges that [redacted] is collaborating with Ms. Hazel Downing enrolled in the Doctorate of Education program at the University of Phoenix in conducting the study on job satisfaction of critical care nurses in Hawaii. We understand the purpose of this research is to determine the relationship of job satisfaction to nurse socio-demographics and work settings of part time/full time practicing critical care nurses working in the emergency room or intensive care unit nurses in Hawaii, and will be conducted under the supervision of Dr. Raj Singh, faculty mentor, from the University of Phoenix.

This project will be an integral part of our institution/agency and will be conducted as a collaborative effort and will be part of our curriculum/research/data/service delivery model.

Sincerely,

[redacted]

Name: [redacted]

[redacted]

APPENDIX H3: LETTER OF COLLABORATION MEDICAL CENTER Z

UNIVERSITY OF PHOENIX

LETTER OF COOPERATION AMONG INSTITUTIONS

Date: April, 2009

To: Office of the Provost/Institutional Review Board
University of Phoenix

This letter acknowledges that [redacted] Medical Center ICUs and Emergency Department nursing units are cooperating with Ms. Hazel Downing enrolled in the Doctorate of Education program at the University of Phoenix in conducting a study on job satisfaction of critical care nurses in Hawaii. We understand the purpose of this research is to determine the relationship of job satisfaction to nurse socio-demographics and work settings of part time or full time practicing critical care nurses working in the emergency room or intensive care units in Hawaii, and will be conducted under the supervision of Dr. Raj Singh, faculty mentor from University of Phoenix.

Sincerely,

[redacted]

[redacted]
Director [redacted] Nursing Institute
[redacted] Medical Center

APPENDIX I: PERMISSION TO USE EXISTING SURVEY

THE UNIVERSITY OF IOWA
COLLEGE OF NURSING

Permission to use form:

This gives permission to use the McCloskey/Mueller Satisfaction Scale (MMSS) to Hazel L. Downing for the purpose as stated in the request dated August 18, 2008.

The instrument may be reproduced in a quantity appropriate for this project.

Signed:

Sue Moorhead, Associate Professor, College of Nursing

Date: August 28, 2008

The University of Iowa
The Center for Nursing Classification & Clinical Effect
College of Nursing 407 NB
Iowa City Iowa 52242 USA

APPENDIX J: STATISTICIAN STATEMENT

To Whomever it May Concern December 3, 2009

The analysis of data collected by Hazel Downing for her dissertation at University of Phoenix on 'Job Satisfaction of Hawaii Critical Care Nurses' is kept strictly confidential and is used to meet the needs of the study. The Data shall not be used for resale. The terms and conditions which appear below govern the supply and use of data obtained form Hazel Downing. Compliance with the terms and conditions hereof are strictly adhered to

All care and diligence has been exercised in the processing, analyzing and extracting of the information. To protect the identity and confidentiality of persons or businesses providing information the data have been aggregated in such a manner so as to prevent any person from identifying individual/ household /business establishment pursuant to Section 8 (2) of the Statistics(Amendment) Act 1984.

Sincerely,

Tom Granoff. Ph. D