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Abstract

Background

Nursing is the largest health care profession in the U.S. There are 3.1 million registered nurses (RNs) nationwide, over four times as many as there are physicians. Hospital nurses have a vital presence in the healthcare industry as highly skilled professionals who perform the essential service of patient care on the front line. Research points toward an association between work environment and nurse outcomes. Several studies have linked favorable nurses' work environments to improved patient experience and care quality. The purpose of this study is to identify the factors that influence hospital nurses' eating practices during their shifts.

Methods

A qualitative research method was chosen in order to probe into the factors that influence what, how, and when nurses eat during their shifts amidst the high-pressure profession of patient care. Twenty female hospital nurses in New Jersey who work 12-hour shifts were recruited to participate in a semi-structured interview. The Social Ecological Model (SEM) was chosen to assess the factors influencing the nurses' eating practices through four levels of influence; individual, interpersonal, organizational and public policy. Atlas.ti qualitative data analysis was utilized to analyze responses and uncover major themes of influence.

Results

A majority of nurses (65%) expressed dissatisfaction in their eating habits. Eleven themes describing the factors that influenced their eating habits emerged and were categorized under four major headings; occupational and shift characteristics, hesitation to take breaks, influence and availability of unhealthy food, and organizational and industry policy. The sub-themes more specifically identified the factors that led to nurses' discomfort in taking breaks, which in turn,

prevented satisfactory eating habits. Their perceived inability to take breaks was due to patient load, the unpredictability of patient needs, their reluctance to place the burden of additional patient load onto other nurses, their tendency to prioritize patient care over self-care, and the repercussion of working longer hours to complete their work. Other factors included the presence of unhealthy “junk” food options, food and beverage regulations that restricted the ability to eat and drink, and the need for more staffing.

Conclusions

An intervention using leverage points from all four levels of influence should be implemented to enable nurses to take sufficient meal breaks. Hospitals and the American Nurses Credentialing Center should take steps to provide a more accommodating eating environment for nurses during their shifts. Positive nurse outcomes are linked to job-satisfaction, higher patient care quality, and fewer errors. Hospital nurses require a work environment that supports the break time necessary for satisfactory eating habits.

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MONTCLAIR STATE UNIVERSITY

Factors Influencing the Eating Practices of
Hospital Nurses During their Shifts

by

Tina Maria Monaghan

A Master's Thesis Submitted to the Faculty of

Montclair State University

In Partial Fulfillment of the Requirements

For the Degree of

Master of Science

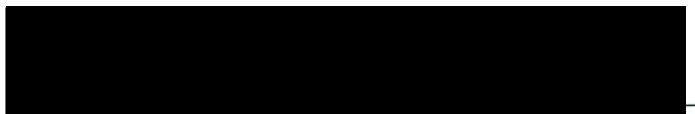
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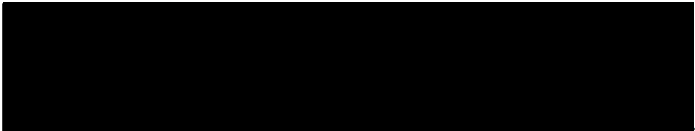
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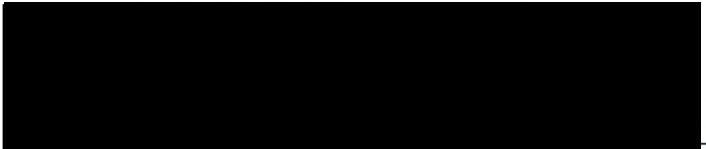
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FACTORS INFLUENCING THE
EATING PRACTICES OF HOSPITAL NURSES
DURING THEIR SHIFTS

A THESIS

Submitted in partial fulfillment of the requirements

For the degree of Master of Science

By

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Montclair, New Jersey

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Table of Contents

Abstract	1
Acknowledgments	3
Thesis Signature Page	4
Title Page	5
Table of Contents	6
List of Tables and Figures	8
List of Abbreviations	9
Chapter I: Background and Significance	10
A. Introduction	10
B. Role of Nurses	10
C. Hospital Work Environment	12
D. Nursing Education and Training	14
E. Occupational Health Issues for Nurses	15
F. Pilot Study	16
G. Dietary Impact on Health and Performance	17
H. Aims and Hypotheses	19
Chapter II: Theoretical Framework	22
A. Introduction	22
B. Social Ecological Model (SEM)	22
C. Evolution of SEM	23
D. SEM Application in Dietary Research and Interventions	25
Chapter III: Research Methods	32

A. Introduction	32
B. Qualitative Study Method	32
C. Respondent Recruitment and Selection	33
D. Interview Guide	34
E. Interview Protocol and Data Collection	35
F. Data Storage	37
G. Human Subjects' Protection	37
H. Data Analysis	38
Chapter IV: Results	39
A. Emergent Themes	39
B. Participant Demographics	40
C. Hospital Demographics	42
D. Results – Aim #1, Daily Routine and Environment	43
E. Results – Aim #2, SEM Levels of Influence	48
F. Results – Aim #3, Predominant Themes	56
Chapter V: Discussion and Implications	58
A. Discussion	58
B. Implications	62
a. Future Research	62
b. Practice	63
c. Policy	65
C. Intervention	67
D. Limitations	68

E. Conclusion	68
References	70
Appendix	79
A. Recruiting Email	80
B. Recruiting Telephone Script	81
C. Recruiting Flyer	82
D. Participant Consent Form	83
E. Interview Guide	85

List of Tables and Figures

Table 2-1: Social Ecological Model Levels of Influence	23
Table 2-2: Early Forms of Ecological Theory	24
Figure 2-1: An Ecological Model of Factors Influencing Diet and Physical Activity	25
Figure 2-2: Social Ecological Model - Influential Factors on Nurses' Eating Habits	31
Table 4-1: Emergent Themes, Sub-Themes, and Levels of Influence	39
Figure 4-1: Social Ecological Model Influential Factors Including Overlap	40
Table 4-2: Age and Experience of Hospital Nurses in Study	41
Table 4-3: Shifts: Hours and Day/Night of Hospital Nurses in Study	41
Table 4-4: Hospitals in Study: Demographics by County	42
Table 5-1: Intervention for Hospital Nurses' Eating Practices	67

List of Abbreviations

Academy of Nutrition and Dietetics	AND
American Association of Colleges of Nursing	AACN
Associate Degree in Nursing	ADN
American Nurses Association	ANA
American Nurses Credentialing Center	ANCC
Atlantic Health Systems	AHS
Bachelor of Science – Nursing	BSN
Centers for Disease Control and Prevention	CDC
Emergency Room	ER
Health Resources and Services Administration	HRSA
Institute of Medicine	IOM
Intensive Care Unit	ICU
National Health Service	NHS
New Jersey Collaborating Center for Nursing	NJCCN
Occupational Safety and Health Administration	OSHA
Practice Environment Scale of the Nursing Work Index	PES-NWI
Registered Nurse	RN
Social Ecological Model	SEM
United States Department of Agriculture	USDA
Washington State Nurses Association	WSNA

Chapter I

Background and Significance

Introduction

Nursing is the largest health care profession in the U.S. (Department for Professional Employees, 2014). There are 3.1 million registered nurses (RNs) nationwide (Health Resources and Services Administration 2010), over four times as many as there are physicians (American Association of Colleges of Nursing, 2016). In hospital settings, nurses comprise 62.2% of medical staff. (2008 National Sample Survey of Registered Nurses, HRSA, 2010). What's more, the RN profession is projected to increase by 16%, between 2014 and 2024, making it among the professions with the greatest job growth (Bureau of Labor Statistics 2015; Lacey et al., 2010). While various reports discuss what has been a shortage of RNs (Rubin, 2015), age demographics of the baby-boom generation and acute care complexity are behind projections of an increase in RN demand (Chan et al., 2012). The December 2015 job outlook for RNs from the Bureau of Labor Statistics (BLS) estimates that the nursing industry will need to add more jobs in the U.S. over the next 10 years largely results from an aging population, medical advancement, and a greater number of people having access to health insurance.

Role of Nurses

Hospital nurses have a vital presence in the healthcare industry for reasons beyond their numbers alone. They are highly skilled professionals who perform the essential service of patient care on the front line. According to the American Nurses Association (ANA), the major areas of nursing work fall under the categories of assessment, diagnosis, outcomes and planning, implementation, and evaluation (ANA, 2016). Some of the main responsibilities of hospital

nurses include administering medications and treatments, wound care, making critical decisions about patient care, and care coordination with other healthcare professionals (ANA, 2016). Guidance and coaching of patients and families, ethical decision-making skills, and clinical and professional leadership are core competencies that are expected of established nurses and nurse leaders (Kutzleb et al., 2015; Hamric et al., 2012).

Nurses are considered to have the highest frequency of direct contact with their patients (Malik et al., 2011). They also have more contact overall with their patients than any of the other healthcare providers who work with patients such as doctors, aides, technicians, and therapists (Sopaporn et al., 2016). Nurses play a crucial role in patient safety with direct responsibility of medication administration, patient monitoring, and coordination of care (Ammouri et al., 2015).

Not only do nurses work diligently to ensure patient safety and comfort, but nursing characteristics like certified skills and level of education have also been known to favorably impact elements of the patient experience including 30-day mortality rates (Estabrooks et al., 2005). Lower mortality and failure-to-rescue (death after a treatable complication) rates among surgical patients were found in hospitals that had higher proportions of baccalaureate degree-holding nurses (Aiken et al., 2003). An analysis of 48 intensive care units (ICU) found that nurse competency is an important factor in creating and preventing adverse events involving patients (Kendall-Gallagher, 2009). Another study that examined the impact of nursing care on patient safety found that a higher ratio of professional nurses versus less experienced nurses led to lower rates of medication errors and wound infections. Less experienced nurses had a higher rate of patient wound infections (Hall et al., 2004).

A patient testimonial from the perspectives of both doctor and patient about the value of hospital nursing is worth noting. Dr. Arnold Relman, a 92 year-old retired Massachusetts physician “fell down the stairs in my home, broke my neck and very nearly died”. Relman states that "What personal care hospitalized patients now get is mostly from nurses. I had never before understood how much good nursing care contributes to patients’ safety and comfort, especially when they are very sick or disabled. This is a lesson all physicians and hospital administrators should learn. When nursing is not optimal, patient care is never good” (Relman, 2014).

Dr. Relman’s revelation was also written about in another New York Times online article where author Lawrence Altman, MD pointed out that “Nurses’ observations and suggestions have saved many doctors from making fatal mistakes in caring for patients. Though most physicians are grateful for such aid, a few dismiss it – out of arrogance and a mistaken belief that a nurse cannot know more than a doctor” (Altman, 2014).

Hospital Work Environment

In order to evaluate a nurses’ practice environment, the most effective instrument is the Practice Environment Scale of the Nursing Work Index (PES-NWI) (Lake, 2007). Using the PES-NWI to evaluate the nursing practice environment has also been useful in assessing nurse recruitment, retention and quality patient outcomes. The index measures major elements of the nurse’s workplace including; participation in hospital affairs, quality care, manager ability, leadership and support of nurses, staffing and resource adequacy, and collegial nurse-physician relations (Warshawsky et al., 2011). The index measurement criteria stem from some of the same criteria that presently define the Magnet designation, described in more detail below. The

PES-NWI index is an indicator of the overall status of a hospital working environment and therefore provides important information to nurses.

Research points toward an association between work environment and nurse outcomes (Hall, 2003). Several studies have linked favorable nurses' work environments to improved patient experience and care quality (Kutney-Lee et al., 2009; Aiken, 2008; MacLeod, 2012). In a study of 168 Pennsylvania hospitals, nurses in what were measured as better care environments reported more positive job experiences and fewer concerns about quality of care. Results also indicated that patients had lower risks of failure-to-rescue and death (Aiken et al., 2008). Consequently, there is clear incentive for hospitals to improve the working environment for nurses and thus, improve patient outcomes (MacLeod, 2012; McHugh et al., 2014). Nurses value autonomy, having a voice, adequate resources, useful technology, and supportive leadership (Haynes, 2008). Recent trends in the nursing profession have contributed to a pronounced focus on the hospital workplace. According to the American Nurses' Credentialing Center (ANCC), The Magnet Nursing Services designation was designed to provide nurses with a rewarding environment that fosters quality nursing services while building job satisfaction and retention (ANCC, 2016). It has become the "gold standard" in not only determining the quality of a hospital with respect to its nursing practice environment but consequently as a benchmark for quality of patient care and safety (University of California Davis Medical Center, 2015).

The effort by hospitals to improve their work environments can lead to positive nurse outcomes like lower rates of burnout and job dissatisfaction (Kutney-Lee et al., 2012). Hospital recognition programs like the Magnet designation and the U.S. News & World Report Best Hospitals annual lists are guiding hospitals toward providing quality care while promoting a positive environment and professional development for nurses. Nursing satisfaction is a key

retention tool and is higher at Magnet designated hospitals than those that do not have Magnet designated status (Haynes, 2008).

Nursing Education and Training

A growing number of hospitals are seeking nurses with a four-year Bachelor of Science in Nursing (BSN) degree due in large part to research linking nurses with higher education to better patient outcomes and in response to the 2010 Institute of Medicine goal for hospitals to have 80% of their RNs hold BSNs by 2020 (Aiken et al., 2003). The education required to become a hospital nurse with an undergraduate degree can be fulfilled in several ways, but the BSN is becoming the education of choice for many hospitals. Prospective nurses can complete a hospital-based program with a Diploma in Nursing, attain an Associate Degree (ADN) in Nursing at a community college or complete a four-year Bachelor of Science in Nursing (BS/BSN) degree from a university or college. The Magnet designation for nurse managers and nurse leaders is that they hold a BSN or MSN which is also prompting more RNs to further their education.

A 2013 National Workforce Survey showed that the top three undergraduate degrees for RNs is a BSN at 41%, an ADN at 29% and Diploma in Nursing at 8% of those surveyed. Additional credentials for nurses require that they be licensed in the state where they practice and that they complete ongoing educational requirements on an annual basis (ANA, 2016). As a result of the 2010 IOM report and greater effort by hospitals to increase the number of BSN degrees among their nursing staffs, education credentials will continue to be an important issue for nurses of all ages.

Occupational Health Issues for Nurses

Not surprisingly, the nursing profession involves more than individual skills, competencies, and formal education. Physically, nursing work can take a toll. Working conditions and the hospital environment play a key role in how nurses attend to their personal needs like hunger, thirst, rest and using the restroom throughout the shift. Hospital nurses walk an average of four to five miles per 12-hour shift (Welton et al., 2006). The physical demands involved in patient care can require extensive lifting, pulling, bending, and twisting. A study in the U.S of more than 1100 licensed nurses associated long hours with a considerable increase in musculoskeletal disorders (Lipscomb et al., 2002). Several larger studies associated long hours (12 or more) to significant increases in needlestick injuries (wounds inflicted by accidental skin punctures from needles) (Trinkoff et al., 2007). The 2011 ANA Health and Safety survey of nurses about their working environment lists the top 3 concerns by response:

1. Effects of stress and overwork – 74%
2. Disabling musculoskeletal injury – 62%
3. Contracting an infectious disease – 43%

(ANA, 2011)

All three concerns have shown slight improvement over the past 10 years but are still significant workplace hazards for nurses (ANA, 2011).

Striving for work-life balance has become increasingly popular among organizations around the world with a focus on self-care and proper balance for job satisfaction and performance (Beauregard et al., 2009). Several studies have found that periodic breaks can enhance short term performance and reduce fatigue as well as physical discomfort (Faucett et al., 2007; Galinsky et al., 2000; Rogers et al., 2004; Tucker et al., 2003). The duration of a hospital

shift for the majority of nurses in 2009 was typically 12 hours (ANA, 2009). Long hours have become customary for nurses since hospitals moved from an eight-hour to a 12-hour shift. Prompted by a nursing shortage during the 1970's and 1980's, hospital shifts were changed from three eight-hour shifts per day to two 12-hour shifts in the U.S. and have remained as such (Josten et al., 2003).

In order for nurses to finish charting and turn over their patient information to the new staff coming in, a 12-hour shift can end up lasting even longer. Nurses in high patient acuity units like surgery and intensive care often work extra hours, exceeding 12 hours (Rogers et al., 2004). Despite working long hours, an ANA 2009 survey indicated that 35% of the nurses surveyed reported that they rarely or never took a meal break throughout their shift (ANA, 2009).

Long hours do not portend job satisfaction in any profession, but for nurses working with patients, they can lead to dangerous consequences. The results of a 2002 nationwide survey of hospital nurses working a shift of 12.5 hours or longer revealed that 30% of nurses reported making at least one error and nearly 60% of the errors involved medicine administration. The likelihood of making an error during these shifts was three times the rate of errors during an 8.5- hour shift. (Rogers et al., 2004).

Pilot Study

Prior to the current study, a qualitative study was conducted in 2015 for a graduate level course in the Nutrition and Food Science program at Montclair State University in order to determine if nurses are able to eat healthy meals during their shifts. Semi-structured interviews were used to study the eating habits of eight female hospital nurses in Northern and Central

New Jersey in October and November of 2015. The pilot study interview guide contained 18 questions addressing nutrition knowledge, food preferences, eating habits at work and the challenges involved with eating at work. The research objective was to identify whether nurses were able to eat healthy meals during their shifts. Interviews were conducted in person and transcribed verbatim. Inductive content analysis was used to identify the major themes that influenced the nurses' eating habits. Five themes emerged and served as the basis for the aims and hypotheses of the current study. The themes included patient care over nurses' own care, convenience of food consumption, time limitations, advance preparation of food brought from home, and regulatory restrictions regarding the presence of food in the unit. The five themes were described by the nurses in the study as barriers to eating during their shifts

This pilot study revealed that hospital nurses customarily work through their designated breaks despite not being paid for that time. Seven out of eight nurses reported not having sufficient time to eat balanced meals. In order to avoid taking time to use the restroom, they refrained from drinking sufficient quantities of water during their shifts. Those seven nurses also cited the regular presence of unhealthy "junk" food donations from patients and their families as a major temptation. They expressed a desire to improve their eating habits.

Dietary Impact on Health and Performance

Eating practices can have a significant impact on health for hospital nurses given the long hours and pressures that the healthcare profession can present. In a 2011 study exploring nurses' health, researchers found that nearly two-thirds (64.8%) of the nurses did not consume the recommended daily portion of fruit and vegetables. Close to half (42.5%) consumed high fat and sugar content foods daily (Malik et al., 2011). More than half of the nurses surveyed in another

study on self-care did not maintain a regular eating schedule. The study also found that eating was the most frequently used stress release method (Nahm et al., 2012).

As mentioned in the 2015 pilot study, nurses reported consuming inadequate amounts of water to avoid having to use the restroom and be absent from their patients. Nurses have been found to put their patients care before their own care (Mullen, 2015). Other environmental factors may seem to give less obvious cause for concern but are worth noting. Unhealthy “junk” food donations of cookies and candy from patients and their families to express appreciation are often found in the break room (Zapka et al., 2009). When time is of the essence and food options are limited, routinely grabbing cookies can be detrimental to dietary health. Eating whatever food is readily available on the run is commonplace. A study of nurses in an English hospital ward found that there was a “never-ending supply” of chocolates donated by patients. Respondents ate an average of 5.1 chocolates per day, but reported that they would have preferred a healthy alternative (Cheung, 2003).

Given the long hours and physical tolls of a nurse’s shift, taking the time to consume essential nutrients and stay hydrated is important. According to the 2015-2020 Dietary Guidelines for Americans, healthful diets that provide adequate daily amounts of nutrients can promote good health and reduce major risk factors for chronic disease (U.S. Department of Health and Human Services, 2015). The recommendation to have sufficient nutrients through balanced meals is important for anyone including nurses who work lengthy and strenuous shifts. According to the Academy of Nutrition and Dietetics (AND), “the total diet or overall pattern of food eaten is the most important focus of healthy eating” (AND, 2016). Protein to repair damaged cells (MedlinePlus, 2015) from physically demanding patient care and nutrient dense carbohydrates to supply energy are also vital (National Health Service, 2014).

Much of the existing research on hospital nurses is focused on patient safety (Lang et al., 2004; Hughes et al., 2008; Stimpfel et al., 2013), nursing workload and performance (Aiken et al., 2002; Hughes et al., 2008, Keijsers et al., 1995), job satisfaction, nursing shortage, and staffing (Aiken et al., 2002; Lang et al., 2004; Tam et al., 2013) but little on lifestyle and preventative health behaviors (Zapka et al., 2009; Nahm et al., 2012). The health of nurses in the U.S. is central to the health of the nation and should be a priority in the healthcare industry. Nurses are considered to be healthy role models by the general public (Blake et al., 2013; Kemppainen et al., 2013). By nature of their livelihood, nurses should be viewed by their patients as pillars of good health and can thus act as advisors and role models. According to the ANA's Scope and Standards of Practice 2010, "Registered nurses are accountable for their professional actions to themselves, their healthcare consumers, their peers, and ultimately to society" (ANA, 2010). Through the practice of healthy lifestyle habits, nurses can benefit their patients as well as themselves (Zapka et al., 2009).

The relevance of the hospital nurse workforce combined with the demands of the profession warrant further research. This study is designed to explore the eating habits of hospital nurses during a 12-hour shift. There are three major aims of this study followed by their respective hypotheses:

Aim #1:

Describe the daily routine, working environment, and eating practices of hospital nurses who work a 12-hour shift.

Hypothesis:

The majority of hospital nurses in this study are unable to maintain what they describe as “satisfactory eating habits” during their shifts due to unpredictability in their routine and a lack of control over their work load.

Aim #2:

Utilize the Social Ecological Model to identify the factors that impact the eating practices of nurses during their shifts.

Hypothesis 2.1: Individual influences on nurses’ eating behaviors include attitudes about addressing patients’ needs over their own personal needs during their shift.

Hypothesis 2.2: Interpersonal influences on nurses’ eating behaviors include the lack of coverage from other nurses or supervisors in order to take a fully allotted break.

Hypothesis 2.3: Organizational influences on nurses’ eating behaviors include the availability of unhealthy “junk” food donated by patients and families.

Hypothesis 2.4: Public policy influences on nurses’ eating behaviors include industry and hospital policies that restrict food and beverages on the unit floor.

Aim #3:

Determine which levels of influence are most prevalent in affecting the eating practices of hospital nurses.

Hypothesis:

Factors within the individual and interpersonal levels of influence are the most prevalent factors impacting the eating practices of hospital nurses.

Chapter II

Theoretical Framework

Introduction

The working environment for a hospital based nurse is dynamic and multi-dimensional. There are many influences in the hospital environment that can have an affect on nurses' eating practices. Nurses interact with a variety of medical personnel including fellow nurses, technicians, nurses' aides, doctors, managing nurses, and administrators, along with patients and the patients' family members. When it comes to patients alone, nurses are typically responsible for providing care for more than one patient at a time. Average patient ratios in a recent study ranged from four to six patients per nurse (Stimpfel et al., 2013).

The working environment for participants in the 2015 pilot study indicated that in addition to individual and interpersonal influences, nurses are also influenced by dealings with their patient workload, demands of the job, and hospital policies. To study the implications that this complex workplace has on nurses' eating habits, the Social Ecological Model (SEM) was used. A qualitative analysis incorporating the SEM framework will aim to provide a comprehensive set of data to identify the major factors influencing nurses' eating practices. With a better understanding of these factors, recommendations can be proposed for how to maintain or improve upon their eating habits in future research and practice.

Social Ecological Model

The underlying concept of SEM is that there are multiple levels of influence that impact behavior. SEM levels focus on individual, interpersonal, community, organizational and public policy influences. The individual (or intrapersonal) level represents biological and psychological influences such as knowledge, attitudes, beliefs and experiences. The interpersonal level reflects

social and cultural influences like family, friends, peers, work colleagues and social norms among close-knit groups. Community and organizational influences generally refer to group norms in the immediate environment like school, church, the workplace, the neighborhood, or in other social and cultural organizations. The public policy level focuses on industry or community policy, rules, regulations, systems, media, and local, state and federal laws. (Glanz et al., 2008; Contento et al., 2010). Table 2-1 describes the characteristics within each level of influence:

Table 2-1 Social Ecological Model Levels of Influence

Level of Influence	Description
INDIVIDUAL	<i>Individual characteristics including knowledge, attitudes, skills and self-efficacy</i>
INTERPERSONAL	<i>Family, friends, peers, colleagues, co-workers and groups who contribute to identity and provide support</i>
COMMUNITY	<i>Relationships between organizations, institutions, Businesses, social groups, etc.</i>
ORGANIZATIONAL	<i>Organizational rules, regulations, normative behavior that promote, or constrain behavior</i>
PUBLIC POLICY	<i>Industry-wide or national policies and laws that regulate practices and behavior</i>

(Centers for Disease Control and Prevention, 2015)

Evolution of SEM

The Social Ecological Model (SEM) addresses the limitations of lifestyle modification programs that have historically focused solely on individual influences. Examining a broader

array of environmental influences and their inter-relationships could be overlooked when applying the earlier behavior models.

Early forms of SEM expanded upon traditional methods that targeted the research subject's immediate setting and individual focus to explain behavior. As theories evolved, some were designed primarily to explain behavior like Ecological Theory and Systems Theory. Other forms were used to guide interventions. A sample of the early forms of ecological theory are listed Table 2-1 below.

Table 2-2. Early forms of Ecological Theory

Ecological Theory	Main Construct	Theorist
Ecological Psychology	Studying the influence of the outside environment on the person to explain behavior	Lewin, 1951
Systems Theory	The study of larger contexts in the form of environmental systems to explain behavior	Bronfenbrenner, 1977
Operant Learning Theory	Cues in the environment guide behavioral interventions	B.F. Skinner, 1953
Ecological Model of Health Behavior	Uses five levels of influence – intrapersonal, interpersonal, institutional, community and public policy to guide interventions	McLeroy et al., 1988

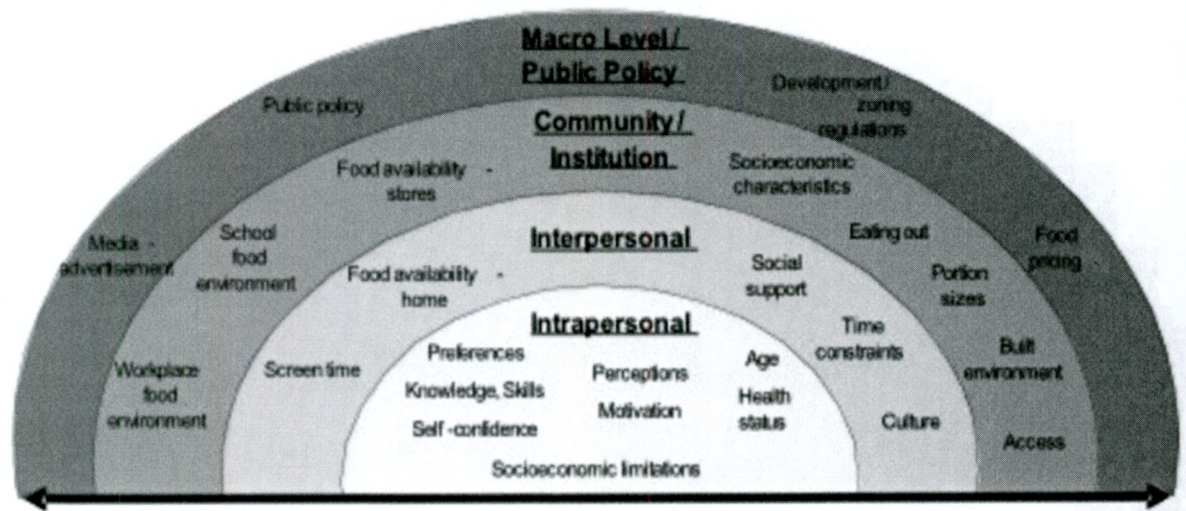
(Glanz, et al., 2008)

An approach to incorporating more environmental systems or layers of influence broadened out the research lens and led to the multi-perspective approach that is used more frequently today. Ecological models have been adapted over time to group the levels of influence on behavior or tailor them to specific use (Stokols, 2003; Cohen 2000; Glanz, 2005).

Figure 2-1 is a diagram of the Social Ecological Model as it applies to a study of barriers to healthful eating and physical activity. With respect to dietary barriers, behavioral influences at the individual level may include attitudes, food preferences, and nutritional knowledge. Social

dining norms such as rituals with family and friends are among the interpersonal influences that can be explored. Community and organizational levels of influence may include the local grocery store, favorite restaurants and options in the cafeteria at work or school. Influential policies may stem from ethnic or religious observances, food prices, food availability, grocery store or farmers market hours and proximity.

Figure 2-1. An Ecological Model of Factors Influencing Diet and Physical Activity



(Fitzgerald et al., 2009)

SEM Applications in Dietary Research and Interventions

A core aspect of SEM is that the levels of influence interact with each other and work together. Behaviors can be categorized in more than one level. Understanding behavior change is more effective when considering multiple and interacting determinants of health behaviors. Another distinguishing element is that once the specific SEM levels of influence have been identified for a particular population, they can also be used as leverage points for guiding health

behavior intervention. Behavior interventions work best when all applicable levels of influence are engaged (Glanz et al., 2008). Behavior change is more sustainable when personal motivation is combined with support from social norms and reinforcing policy or regulation from the surrounding environment (Gregson et al., 2001). Engaging physical and social support across the level spectrum can help to make newly adopted behavior decisive and lasting. New practices may fit more readily into daily life when multiple influences are addressed, providing more support and reinforcement (Contento et al., 2010).

SEM was used in a two- year study of middle school students' dietary habits and physical activity. School and cafeteria staff at the interpersonal and organizational levels were targeted with strategies to reduce fat intakes such as learning and promoting new recipes for healthier options in the cafeteria. Parents and students were given tips on how to prepare a lower fat content lunch and school administration was targeted to establish new policies. Media strategies were implemented at the public policy level through posters, bulletin boards and newsletters (Fitzgerald et al., 2009; Sallis et al., 2003).

Large scale behavior change may require greater public policy influence when personal motivation and interpersonal influence are insufficient. Efforts toward tobacco control provide an example of how broad policy change on a national level was needed to counter the more immediate negative influences like family and friends who smoked (Gregson et al., 2001). The Centers for Disease Control and Prevention (CDC) advocate using a combination of interventions at all levels as most effective, particularly with behavior like tobacco use (CDC, 2015). Combining interventions over time led to greater tobacco control. Interventions at the individual level such as assisting smokers to quit along with public policies such as increased

tobacco prices and tobacco marketing restrictions worked together to reduce smoking behavior significantly (CDC, 2012).

In a smoking cessation randomized control trial, participants who were childhood cancer survivors were randomly assigned to either the self-help or the peer counseling group. Participants in both groups received smoking cessation manuals and letters from physicians that correlated with SEM organizational and public policy levels of influence. The peer counseling group received one-on-one telephone counseling from another cancer survivor along with nicotine replacement therapy at no cost. The quit rate of the peer counseled group was two times that of the self help group. The combination of interpersonal counseling with influences at the organizational and public policy levels was a distinguishing factor between group results (Emmons et al., 2005).

Other applications of SEM on dietary habits have also produced insightful results for behavior interventions. A study in California used SEM to assess the effects of community and individual characteristics on alcohol drinking patterns of those surveyed. Individual drinking behavior, within the contexts of community-based drinking norms and alcohol availability were examined. The objective was to identify whether the degree of alcohol availability and individual drinking habits affected drinking patterns across a group of California cities. The research results suggested that a greater number of bars in a community are associated with greater alcohol use and the prospects of other alcohol driven impacts on the community (Gruenewald et al., 2014).

A qualitative study of factors influencing obesity among low-income participants utilizing SEM was conducted in Baltimore, MD (Christiansen et al., 2013). Interviews, focus groups and observation were used to explore the eating habits and food environment perceptions

of 20 African-American adolescents. Influences at the community, interpersonal and individual levels were examined. Four main themes emerged and were studied within each environmental influence:

- Neighborhood
 - Accessibility of food
 - Safety of neighborhood
- School
 - School food environment
- Family
 - Family health history
 - Role modeling
 - Monitoring
- Peers
 - Peer behaviors

Researchers found that key leverage points for future interventions were found within the three constructs of the family social environment since family influence had the most impact on eating habits. Continued behavior change would require combined efforts from neighborhood and school influences in conjunction with interpersonal influences of peers for additional reinforcement (Christiansen et al., 2013).

While some studies and interventions focus more on the innermost SEM levels, statewide Food Stamp programs increased food stamp purchases on healthier food by utilizing public policy influences like the Food Pyramid, predecessor to the MyPlate food guide. Several states formed community partnerships with the United States Department of Agriculture (USDA) to study consumer purchase behavior and conduct interventions. The combined effort used food guide resources to provide an accompanying nutrition education program. Qualitative studies in Illinois and Wisconsin among other states examined the depth of interaction between community partnerships to assess the impact of their programs. (Gregson et al., 2001).

In a similar initiative at the organizational/community level, the Maine Nutrition Network joined together with local farmers' markets to accept food stamps. Decisions to purchase fresh fruit and vegetables took place at the individual level and sales of fresh produce to low income families rose by 15% (Hersey et al., 1999). As a result of policy supports, food stamp purchases of healthy options increased.

SEM is used not only as a tool for studying dietary behavior, but also toward changing behavior in conjunction with the 2015-2020 Dietary Guidelines for Americans initiative (U.S. Department of Health and Human Services, 2016). An understanding of how the model operates in interventions can help to guide and interpret SEM applications to research. The strategy calls for everyone at all levels to have a role in promoting healthy dietary habits and is based on evidence that implementing change at multiple levels of influence can help to improve eating behaviors.

The Dietary Guidelines initiative labels the outermost level of influence as Sectors. The Sectors level incorporates a wide variety of systems that can impact dietary habits including governments, education, healthcare, agriculture, entertainment and media. The next level is called Settings and focuses on the home and anywhere away from home such as cafeterias and other food service organizations where eating choices are made. Social and Cultural Norms and Values is the level that zeroes in on the attitudes, beliefs and behaviors involved in food choices, body weight, physical activity and health preferences. The Individual sector, as the innermost influence, centers on age, sex, knowledge, skills, health, personal preferences, etc. (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion 2016). The strategy for promoting healthier eating habits calls upon everyone from each sector to whom the target audience is exposed as having a key influence and playing a vital role.

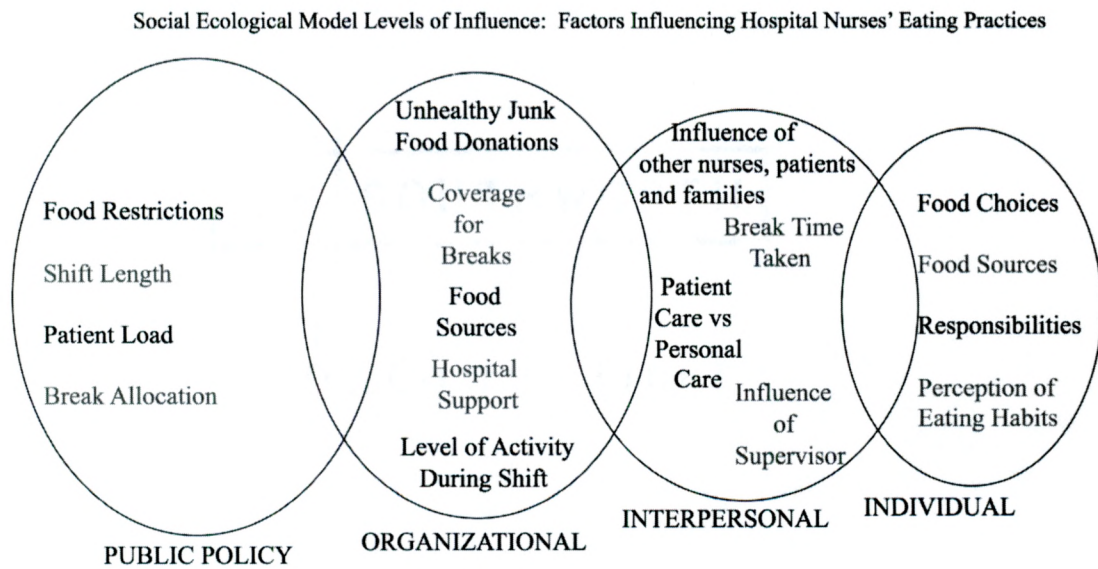
The SEM was adapted to guide this study given research findings that a multi-level model can help to identify different sources of influence and corresponding leverage points for effective behavioral intervention (McLeroy et al., 1988). In today's healthcare industry, policy making significantly impacts hospitals and the nursing profession and was considered in this behavioral research. SEM includes the role of intermediaries including legislators, policy creators and corporate decision makers within the public policy level in evaluating behavior change strategies (Stokols, 1996).

SEM provides the framework for exploring the various levels of influence that can impact nurses' eating behavior and was structured in this research to address the various interactions in a hospital unit setting. Four levels of influence; individual, interpersonal, organizational and public policy are utilized for this study. Factors within the community level were not considered in this study in order to focus on the many influences within the immediate hospital environment. The characteristics within each level are described below:

<u>Level of Influence</u>	<u>Description</u>
INDIVIDUAL	<i>Knowledge and attitudes about food choices, food preparation skills, values of work performance, patient care vs personal care</i>
INTERPERSONAL	<i>Support from family, nurse managers, and fellow nurses, the working relationships with technicians and aides, empathetic relationship with patients and their families</i>
ORGANIZATIONAL	<i>Social norms within the unit, hospital policy and regulations, availability of cafeteria healthy food options</i>
PUBLIC POLICY	<i>Large scale and industry policies like food restrictions, patient ratios, lunch/rest breaks and healthy eating support efforts</i>

Findings from the 2015 pilot study helped to guide which factors to explore within each level of influence. Figure 2-2 indicates the factors being tested within each level of influence (every other theme is shown in lighter gray to indicate separation between each one).

Figure 2-2. SEM Influential Factors on Nurses' Eating Habits



Chapter III Research Methods

Introduction

The purpose of this study is threefold. The first objective is to describe the daily working environment of hospital nurses in New Jersey. Secondly, using the Social Ecological Model, (SEM) as a framework, this study aims to identify and describe the individual, interpersonal, organizational and public policy factors that influence the eating practices of hospital nurses. The third objective is to determine which of these factors is most influential in impacting nurses' dietary practices.

Qualitative Study Method

A qualitative research method using individual interviews was chosen in order to probe deeply into the factors that can influence what, how, and when nurses eat during their shifts. The hospital setting for a nurse has common themes but can vary from one unit to the next, both within and between hospitals. A qualitative approach can also facilitate a clearer understanding of the unique characteristics that differ between hospitals and units that a survey might not reveal. For example, how and why the level of activity in an emergency room (ER) differs from the activity in labor and delivery could be better articulated in an interview. An ER nurse may experience the pace of emergent injury and trauma work during her shift differently than a nurse monitoring an expectant mother in labor and delivery. By using an interview method, unique information can be gleaned from respondents in their own specific words across various units and hospital settings. The intersections of industry policy, behavioral norms within the unit, and the humanity required for compassionate, high quality

patient care can be complex (Goodrich, 2009). A method involving open-ended questions can serve to address those complexities.

Non-verbal cues from nurses about their feelings and opinions can reveal descriptive data behind the behavior and a more comprehensive understanding overall (Merriam, 2002). A qualitative approach can facilitate a more in-depth exploration of the intrapersonal thoughts involved in the high-pressure profession of patient care. Direct quotes from respondents can provide a wealth of insight that statistics from quantitative study may not uncover.

Respondent Recruitment and Selection

The recruitment process began with a request for referrals using an email (Appendix item A), telephone script (Appendix item B), and flyer (Appendix item C) in accordance with International Review Board protocol. To be eligible for participation, nurses were required to have been working at their current employer for at least one year in order for the study to target subjects who have had sufficient time to establish habits and form routines. Participants were restricted to the female gender because a large majority (90%) of the nurse population in New Jersey is female according to a recent report by the Robert Wood Johnson Foundation (Vaida, 2016). Potential participants were excluded if they did not work 12-hour shifts so that work hours would be a constant variable. The shift length of 12 to 13 hours is most common today in hospitals (Witkoski-Stimpfel, 2013). Recruitment was aimed at achieving a variety of hospitals and medical centers throughout New Jersey to offer a cross section of urban, suburban, and rural areas and both private and public facilities.

Flyers were sent to medical, education and pharmaceutical professionals in New Jersey with whom the researcher was acquainted during March and April of 2016. A request was

made to forward the flyer and email to prospective research subjects. A snowball effect produced two educators who forwarded the email and flyer to nursing students at two additional nursing colleges.

Upon securing 14 interviews, it was determined that data saturation had not yet been reached. In order to obtain a larger sample with 20 interviews as the goal, second and third rounds of email and telephone requests were sent to prospective participants until the last six interviews indicated new information saturation. The last two interviews did not reveal a substantial amount of new information and therefore a sample size of 20 was determined to be sufficient. Four nurses after having been interviewed referred fellow nurses who participated. Approximately 50 referral sources responded and were screened to identify if they were eligible. There were 18 who did not respond to subsequent communication to arrange an interview. Twelve respondents did not meet the eligibility criteria. Six did not work in a New Jersey hospital, three did not work at their current employer for at least one year and three did not work a 12-hour shift. A total of 20 interviews were conducted. None of the participants in the current study had participated in the pilot study.

Interview Guide

An interview guide of 22 questions was based on emergent themes from the pilot study and further developed using levels of influence as identified by the SEM. They were then grouped within their corresponding level. The complete interview was timed to take approximately 15 minutes. The questions were grouped by level of influence. See Appendix item E., Interview Guide, for the complete list of questions.

Individual Influences of skills and values were assessed through interview questions about patient load, primary responsibilities, shift assignment, the level of activity in the unit, and ability to attend to personal care (as a measure of prioritizing personal vs. patient care). Questions about other *individual influences* including knowledge and attitudes were centered on food choices, food source selection and level of eating behavior satisfaction. Questions about influence from other nurses and staff along with their views on taking breaks fell under *interpersonal influence* which examines the role of colleagues, peers, co-workers, and close knit groups who contribute to identity and provide support. *Organizational influences* were uncovered through questions about social norms within the unit, supervisory behavior, and hospital administration awareness, all of which take place within the hospital where the nurse is employed. The influences of *public policy* that reflect the outermost layer of influence were identified through questions about industry regulations and hospital policies. Adherence to regulations and policies was also studied.

The last two questions were also posed as prospective leverage points that could be strategically considered in the event of future intervention. Participants were asked if there was anything their supervisor or hospital could do to support healthy eating habits. Four demographic statistics were collected at the beginning of the interview; hospital name, title of unit, the participant's age and the number of years employed in the nursing profession.

Interview Protocol and Data Collection

The primary researcher communicated via email, telephone, or text to make an appointment at a time that was convenient for the participant. Three interviews took place in the private study rooms of a local public library that were reserved in advance. They served as

locations that provided confidentiality and were logistically convenient with minimum travel expenses for the participants. Due to the busy schedules of nurses, three of the interviews were conducted via mobile phone while the participant was commuting to or from work. A greater number of interviews were conducted via the telephone than had been expected. There were 16 nurses who preferred a telephone interview and one who accepted the offer of a FaceTime interview rather than in person. Non-verbal cues such as laughter, pauses and voice inflections were detectable over the telephone and captured on the audio-recordings.

For telephone and FaceTime participants, consent forms (Appendix item D) were emailed to each participant with a request to read it carefully upon receipt. A hard copy was mailed additionally with a self-addressed, postage-paid return envelope to all participants beforehand for them to sign and return. Participants were also verbally guided by the researcher through the consent form prior to the start of each interview. They were informed that the interview posed no risks and that they could discontinue the interview at any time. Nine of the interviews were scheduled with insufficient time to receive the signed consent form prior to the interview. In those cases, the researcher audio recorded the participants' affirmative responses for the questions requiring initials and signature to serve as verification until the consent form was received in the mail.

At the consent of participants, interviews were audio recorded. In order to encourage candid responses, nurses were assured that the interview would be entirely confidential. All 20 participants readily agreed to be recorded and no one expressed or exhibited any reservation. Recordings were labeled with the participant number, mode of communication and length of interview time. The participant number was assigned to each interviewee to serve as the identifier going forward and maintain confidentiality. The recordings were transcribed

verbatim immediately after the interview was completed in order to ensure data quality and validity. The recording was then deleted.

As an incentive for participation, a gift bag containing healthy and convenient snacks along with a small container for bringing food to work was presented after the in-person interviews or sent in the mail for telephone and FaceTime participants. An insert containing brand and nutrient content for each snack was included. An alternative selection was provided to nurses who had allergies, of whom there were two. The range of interview length spanned from 11.32 minutes to 40.38 minutes. The average length of the 20 interviews was 21.34 minutes.

Data Storage

The data storage process also followed Institutional Review Board specifications regarding confidentiality preservation. An Excel spreadsheet list of 20 participants by name and corresponding participant number is being held on a password protected computer. Participant numbers are indicated on the consent form and stored separately in a file. Data from each interview is kept separately with the participant number as the only identifier. Audio recordings and Face Time interviews were stored on a password protected smartphone and deleted immediately after being transcribed (or upon receipt of the signed consent form). All data is identified solely by participant number, kept in a separate file and will be shredded after the required three-year period.

Human Subjects' Protection

This study, protocol number 15-16-97, was approved by the Montclair State University Institutional Research Board prior to research commencement.

Data Analysis

Coding

The data review process began with multiple read-throughs to highlight and annotate significant and reoccurring responses. Atlas.ti version 1.0.45, Berlin qualitative data software was used to code and sort the interview themes. Through inductive data analysis, responses with conceptual similarity were uncovered and grouped together under emergent themes. Codes were further sorted within each major theme to identify overlap and frequencies. A total of 11 overarching themes emerged. Transcripts were reviewed again with additional annotating to ensure a thorough review of the data. Through constant comparison, overlapping themes that became apparent were combined. Thematic analysis as a top-down approach was used at this stage to identify which of the remaining themes were major and sub-themes (Clarke et al, 2013). The 11 initial themes were collapsed into 4 major themes with corresponding sub-themes. Direct quotations that represented the responses by participants were grouped separately under the initial set of themes for the purpose of elaborating on points made in the text.

Frequency

Coded responses to the interview guide questions were also loaded separately onto Excel version 15.18, Santa Rosa. Coded responses were sorted and reviewed further to compare data patterns and calculate code frequencies. The data analysis on Excel served as a limited means of reliability. The remaining major and sub-themes and the levels of influence that they fall within are listed in Chapter IV. A public online forum entitled allnurses.com provided a source of validation through hospital nurses' comments on factors within the major themes from around the country (www.allnurses.com).

Chapter IV Results

Emergent Themes

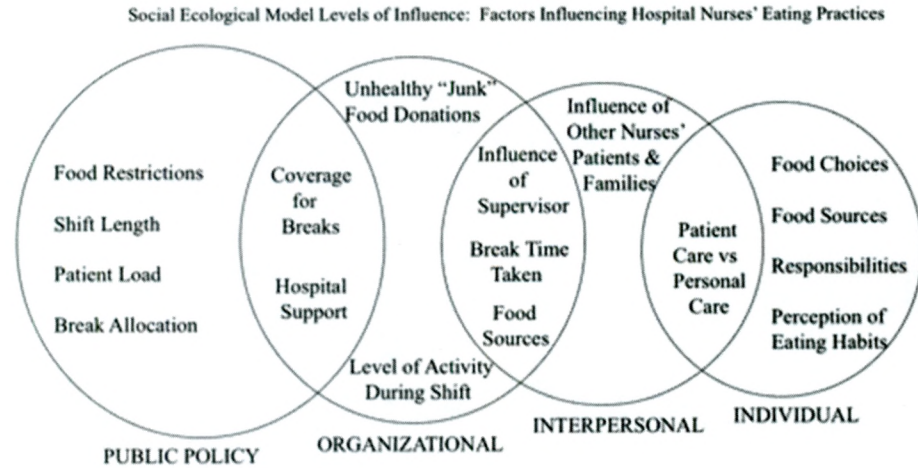
The following major themes and sub-themes in Table 4-1 were found to depict the main factors that influence the eating practices of hospital nurses during their shifts.

Table 4-1. Emergent Themes, Sub-Themes and Levels of Influence

Emergent Themes	Sub-Themes	Levels of Influence
Occupational and shift characteristics	<ul style="list-style-type: none"> • Time constraints • Eating on the run, quick foods, snacking • Limited break time affects eating • Unpredictability of workload 	Individual and Organizational
Hesitation to taking breaks	<ul style="list-style-type: none"> • Patients are priority (self-care is secondary) • Burden on other nurses • Don't want to work longer - delays work completion 	Individual, Interpersonal and Organizational
Influence and availability of unhealthy food	<ul style="list-style-type: none"> • Often present, only option of food available • Stress relief consumption, conducive to temptation 	Individual and Organizational
Organizational and industry policy	<ul style="list-style-type: none"> • Food and water consumption regulation • Break coverage and perceived staffing shortage 	Organizational and Public Policy

As Figure 4-1 demonstrates, some of the themes that were tested and categorized within a single predominant SEM level emerged as response themes that fell within more than one level of influence.

Figure 4-1. Social Ecological Model Influential Factors Including Overlap



Participant Demographics

A total of 20 participants completed the interview in its entirety. Table 4-2 displays the demographic frequencies of all participants for age range and years of experience as a nurse. The average age range of the participant group is 40-49. The sample population covers a broad range of age distribution and is fairly representative of New Jersey's mean Registered Nurse (RN) age of 50 years and Licensed Practicing Nurse (LPN) age of 48 years, according to the New Jersey Collaborating Center for Nursing (NJCCN) RN and LPN Profiles 2013-2014, respectively (NJCCN, 2014). The participants' range of experience in the nursing profession spans from 1.25 years to 30 years with 10.63 as the average number of years of experience.

TABLE 4-2 – Age and Experience

Age Range	N	%	Length of Experience (years)	N	%
20-29	4	20%	1.25-8	10	50%
30-39	4	20%	9-19	6	30%
40-49	5	25%	20+	4	20%
50-59	6	30%			
60+	1	5%			
TOTAL	20	100	TOTAL	20	100

The range of shift length in this sample spans from 12 hours to 15 hours with an average shift length of 13 hours. This is in line with the 12-13-hour shift considered typical in today's hospitals (Witkoski-Stimpfel, 2013). A majority of nurses (12, 60%) interviewed were assigned to the day shift, seven (35%) work at night and one nurse (5%) rotates between both night and day as indicated in Table 4-3.

TABLE 4-3 – Shifts: Hours and Day/Night

Length of Shift	N	%	Shift Assignment	N	%
12 Hours	2	10%	Day	12	60%
12.5-13 Hours	13	65%	Night	7	35%
13.5-15 Hours	5	35%	Both	1	5%
TOTAL	20	100	TOTAL	20	100

Hospital Demographics

The 20 nurses who were interviewed work in 13 hospitals that are located in nine New Jersey counties, of which three are in the Northern and Central section of the state, three are in the Northeastern area, two are in the Central region and one is in the Southwestern part of New Jersey.

Table 4-4 below lists the nine New Jersey counties along with the number of hospitals, nurses and units within each county. Magnet status is also indicated where applicable.

TABLE 4-4 Hospital Demographics by County

County	# Nurses	# Units	# Hospitals	Magnet
Morris	5	5	4	1
Union	5	4	2	
Passaic	3	2	1	1
Middlesex	2	2	1	
Bergen	1	1	1	1
Essex	1	1	1	
Gloucester	1	1	1	
Monmouth	1	1	1	
Sussex	1	1	1	
TOTAL	20	18	13	3

The nurses interviewed represent 12 different hospital units including the Emergency Room (ER), Medical Surgical, Medical Surgical Oncology, Orthopedic Medical Surgical, and Psychiatry, Acute Inpatient Rehab, Labor and Delivery, Maternity and Special Care, Cardiac Telemetry, Neonatal Intensive Care Unit (ICU), Oncology and Same Day Surgery.

The Magnet designation for hospitals is a noteworthy distinction in the healthcare industry and indication of the hospital environment, as mentioned earlier. Of the 22 Magnet hospitals in New Jersey, there are three in the sample population and each is in a different county. A total of six nurses work in Magnet hospitals. It should be noted that four of the hospitals across three different counties fall under the Atlantic Health Systems (AHS) organization as a result of mergers. One of the AHS hospitals has attained magnet status.

Results – Aim # 1

The first aim of this study was to describe the daily routine, working environment and eating practices for New Jersey hospital nurses during a twelve-hour shift. The hypothesis that a majority of nurses in this study are unable to maintain what they describe as “satisfactory eating patterns” during their shifts due to unpredictability in their routine and a lack of control over their workload was supported.

Daily Routine:

Nurses were asked to briefly describe the level of activity throughout their shift. Responses such as “chaos”, “hectic”, “non-stop” and “nonstop busy” highlight a few direct quotes from nurses in medical surgical and emergency room units. Time constraints were evident across all units even when activity levels were described as “steady” or “varies”. An ICU day shift nurse referred to the busy nature of activity in her shift as being “steadily busy” while a surgical night shift nurse described it as being “steadily moderate”.

Nurses in high acuity patient units like oncology describe “running everywhere” and rushing through their work so that they could stay on top of their workload. “I literally...I never stop.” “I feel like I’m never off, I’m always on” reported a nurse from an orthopedic unit.

Activity in other high acuity units is similar. "Oh my God, in medical surgical you're moving 24/7 from the moment you step on that you check your patients out to the end - there's no in between because at night time, primarily we do a ton of admissions and transfers." A typical day in a surgical unit was described similarly. "We're on a dead run. From the minute you hit the floor until you leave, it's a dead run."

The majority of the daily responsibilities that each nurse in this study described as routine were similar from one unit to the next. Nurses were asked to briefly describe their primary responsibilities. A hospital nurse's daily responsibilities involving their patients can include admitting, assessing, monitoring, drawing bloodwork, coordinating interventions, filling doctors' orders, administering medications and intravenous (IV) tubes, ventilating, reviewing reports, monitoring patient status, charting, coordinating patient care with other medical staff, talking to and educating the patients and their families, taking patients to the bathroom, dressing and undressing them, putting patients to bed, transporting, preparing for and executing patient discharge, and preparing patients for procedures. Three of the nurses in this sample also administered chemotherapy and guided patients through surgery recovery. A cardiology nurse described the "medication pass" when the rounds of medications are delivered and administered to each of her patients as customarily taking 2-3 hours if nothing unexpected occurred during that task.

Five of the nurses interviewed, excluding those from the ER (who typically don't follow a schedule), talked about the sequence of events throughout the workday. As they reported, the shift begins by listening to the report about each patient from the previous shift's nurse. The cart or Computer-On-Wheels (COW) is set up to distribute and administer medications. Medications can include pills, shots, intravenous medicine and other treatments. "Most of my

patients are really sick and have multiple medications; they have inhalers, pills, IV's...so the set-up for each patient may take 35-40 minutes per patient" (for 7-9 patients). "Not only that, you're explaining the medication and if family is there and they have any questions, you're spending even more time."

Once the medication pass has been completed, nurses reported circling back through their patients to do assessments, check monitors, fill orders, do subsequent medication passes, and help patients with daily living activities like getting dressed or going to the bathroom. Nurses also reported that they chart each activity for each patient as the day progresses. Additionally, throughout the day, they educate patients and family members, answer their questions and coordinate care with doctors, specialists, technicians, aides and other medical personnel. At the end of the shift, if there are no emergent matters at hand, nurses aim to finish up by preparing their report on each patient for nurses in time for the next shift.

Work Environment

The ability to complete work on time is subject to unexpected events as nurses in the study reported. Delays are caused by doctors being called away or the failure of timely medicine delivery. Disruptions can be caused by a confused patient or concerned family member, as a surgical nurse explained:

"...it's really hard to give another nurse your load because they're already overwhelmed and you never know what's coming next. And our admission process is just constant. Phones are constant. People are always asking questions. Although it's at night and people think everyone is sleeping – No. We have a lot of confused patients, a lot of patients are full care and need to use the bathroom. That's why we don't take our breaks."

According to the nurses interviewed, admitting and discharging patients in certain shifts is interspersed throughout the day and not always on schedule, often experiencing uncontrollable delays. “So we’re busy constantly with new patients. There’s a huge turnover, a real quick turnover” according to an ER nurse.

The difference between a good day and a bad day for a nurse can occur within seconds – when a patient rapidly destabilizes, has a reaction to a medicine, arrives suffering from trauma or an overdose “and throws a monkey wrench into the pile” as one surgical nurse put it, consequently throwing the whole day off schedule in one fell swoop. “I could get one patient that’s an overdose and then that’s all we’re doing is that one patient,” reported an ER nurse. On the other hand, four of the night shift nurses reported that from time to time they could experience a lull in their activity from around 1AM-3AM. “It’s usually pretty steady which is usually a good thing. It can get chaotic. It just depends on the day and your patient assignment.” The descriptions provided by nurses of their daily routine made it clear that a nurse’s work environment is unpredictable and that while certain tasks are routine, every day is different from the previous one.

Eating Practices

Eating practices for a nurse must conform to the constant demands of the job and time constraints. Terms used to describe their eating habits like “on-the-run” or “on-the-fly” were used frequently. In order to understand what nurses eat and are able to acquire, a question was posed about food sources. Of the nurses in the study, 12 (60%) nurses reported that they never go to the cafeteria and three (15%) get food from the cafeteria sometimes. One nurse “always” uses the cafeteria and four (20%) visit often. Distance and time were cited as the main barriers

by four nurses who never get food there. An ER nurse reported that “I stopped going to the cafeteria because by the time I got down and through the cafeteria lines, my break was over. If you only have 15 minutes or 30 minutes, you’re not going to do it.”

A total of 17 (85%) bring food from home, eight (40%) always and nine (45%) often. Food brought from home or the cafeteria was self-reported. When asked to list the typical foods consumed in a given shift, the reported food choices were considered by this researcher as being predominantly nutritious. Top food choices included yogurt, fruit, protein bars, protein shakes, water, smoothies, nuts, trail-mix, sandwiches, salads and soup. The top beverage choices were coffee and water. Coffee was particularly popular among the ER and night shift nurses. When asked what foods were consumed during a typical shift, one ER nurse replied “Coffee, coffee and coffee!” Three nurses reported that they brought food some of the time but would get too busy to eat it or forgot they brought it. “I really don’t bring food from home anymore. I’d always forget it was there and then wouldn’t have it.”

Vending machines were not regularly used as a food source. Six (30%) nurses reported using it “sometimes” and 17 (70%) reported never using them. Reasons for low use included distance “They’re not on my floor” and the lack of healthy options in all but one hospital vending machine. None of the nurses reported ordering food from restaurants regularly. When nurses do order out however, albeit “rarely”, the popular cuisine is Chinese.

Part of Aim #1 was to identify whether nurses were satisfied or unsatisfied with their eating habits at work and why. The hectic daily routine and unpredictable work environment are conducive to unsatisfactory eating practices. When asked about how satisfied or unsatisfied they were, 13 (65%) said they were “unsatisfied” (8, 45%) or “very unsatisfied” (5, 25%). One nurse reported being “satisfied” 50% of the time but not the other 50% of the time. Another

nurse said “For eating, I’m pretty satisfied. For drinking, very unsatisfied”. One nurse said she is “neutral” and the remaining five (25%) reported being “satisfied”.

All five nurses in the “satisfied” group also reported that they bring prepared food from home and three are on structured diet programs like Weight Watchers and Jenny Craig. All three nurses on structured diets are night nurses and reported that adhering to a specific diet plan and bringing their own food from home resulted in a feeling of satisfaction. Prior to their diet plans, they all reported having been “unsatisfied”. Once they began following the diets, they stopped feeling “terrible and exhausted” by the end of their shift and reported no longer struggling to stay awake. “My eating patterns were awful during the night shift until I joined Jenny Craig. I was eating all the wrong food at all the wrong times. Now they’re much better. Now I’m very satisfied.”

Results - Aim # 2:

Utilize the Social Ecological Model to identify the factors within each level of influence that predominantly impact the eating practices of nurses during their shifts.

Individual Influences

The hypothesis that individual influences on nurses’ eating behaviors including attitudes about addressing personal care at work was supported. A question was posed asking nurses if they are able to attend to personal needs like hunger, thirst and using the restroom. A majority of the nurses reported that they delay addressing their personal needs until their work with a patient has been completed. As a labor and delivery nurse explained, “You know, we don’t really take breaks. We’re supposed to get a 15 and a 30 min break. We really don’t say OK, I’m going on

break and disappear, we kind of sit in the break room but if our patient calls, or if the doctor comes in and wants to see the patient, we stop what we're doing and go to the patient.”

An ICU nurse said “I think that as a nurse, my needs come next. My patient is my priority and I'm only there for 12 hours so I always put them (patients) first. I feel that I can wait and my patients shouldn't have to”. An ER nurse reported that “Generally they're (personal needs) deferred. I mean there's usually nothing that can't wait an hour or two or three hours.” Another nurse from the ER said “If I'm terribly busy I'll just avoid and ignore my own needs until it becomes obvious – I'm so dry I can't talk or have to go to the bathroom immediately and then I just force myself to stop.”

Putting patients first when it comes to personal needs was the main factor behind a hesitation to take breaks, one of the key themes in the findings. It was a shared attitude by 13 (65%) of the nurses in the study. The other seven (35%) responded that they are able to attend to their personal needs without much delay. Five of those nurses indicated that they were able to get coverage for a restroom break and two nurses worked the night shift and said it was not a challenge.

A common theme among the same 13 nurses was a tendency to delay using the restroom. Seven nurses disclosed that they hold their bladders routinely. A labor and delivery nurse said “It's terrible to say but there are times when I'll go hours without using the bathroom, without getting a sip of water, without eating.” Another nurse reported that “You know there've been times where I can't hold it anymore. I'll say listen, I need to take a two- minute break because I can't... I have to go. Those things are necessary but for the most part, I won't go to the bathroom as soon as I feel it. I will hold it sometimes an hour or two, three hours you know just so I can finish what I'm doing, instead of going to the bathroom or eating.”

The degree to which nurses delayed attending to their needs varied. Two ER nurses reported that they routinely held off immediate needs for up to three hours if not longer. Not surprisingly, “What’s traditional of many nurses is that your bladders are so stretched out because you do not have the opportunity to void on a consistent basis. Which is not a good thing. My doctor said that many nurses have the same situation” according to a rehab nurse. An ICU nurse explained that:

“You put your patients first and some of your patients are very ill and needing to be revived or brought back every couple times during your shift and it’s hard to walk away from those rooms and put that on someone else and just say you know what, I’ll be back in 15 minutes or I’ll be back in a half hour and I’m going to go sit and enjoy my lunch and my personal... You know I have a hard time doing that, I’d rather cut my lunch short than leave it for someone else. I mean, we do take care of ourselves because as I said you’re no good to anybody if you’re so hungry that you can’t think straight because you have to think and you have to move fast. So we look at each other and say I have to get some food right now, I’m getting a headache and that’s it - you’re covered. So we do take care of ourselves but I do think that we put our patients before ourselves a lot of the time.”

One of the more experienced nurses shared that “...at the end of the day nobody really cares if you’ve eaten or gone to the bathroom or taken care of yourself, only you. The work is still going to be there. I find if I’m able to meet my own needs a little bit better, that I have more strength and endurance. And I feel better.” Even so, for the nurses in this study who value patient care above self care, barriers to eating will likely prevail.

Interpersonal Influences

The hypothesis that interpersonal influences on nurses' eating behaviors include the inability to get coverage from other nurses or supervisors in order to take a fully allotted break was partially supported. When asked about taking their breaks, all 20 nurses reported that they do not take their full break. When probed about how much of a break they do take, nine (45%) reported that they take approximately half of their allotted breaks and eight (40%) said they do not take their official breaks, but will take five minutes at a time when there is an "open-window" in their workload. The remaining three (15%) said that they take "some" of their allotted break time. Responses indicated that they feel unable to take a break, but their resistance may be due to individual perceptions about burdening other nurses and organizational policies about workload and patient-to-staff ratios.

While there was some ambiguity about break policies and coverage, an inability to specifically obtain coverage from other nurses was not fully supported. When asked about what break time they were entitled to, five (25%) displayed uncertainty about the exact break time policy. They reported that they did not take what they thought is the full allotment of break time. The remainder of 15 (75%) of the nurses relayed with certainty that they are allotted a 30-minute lunch break and one or two (depending on the hospital) additional 15-minute breaks.

One nurse from surgical said that she does not typically take her breaks. "I feel like I'm constantly constantly busy, non-stop busy for the most part. Those are my normal days." She went on to share "...I eat out of my pocket." ER nurses were among the group that took five minutes or less of break time. "It would be like I need to step out for two minutes and you would be rushing to run to the bathroom or go to your locker and throw in a handful of trail mix and run back out." "Quick" foods and snacks were referred to as typical food choices. Five of

the nurses interviewed used the terms “eat on-the-run” or “eat on-the-fly” when referring to break taking norms. “I mean, eating is just done on the fly. You know, walk in, throw something in your mouth and chewing while you’re washing your hands and then walking to see another patient.”

A major barrier to taking a break that nurses reported was the perceived burden on other nurses. Taking a break also delayed the time it would take to complete their work as recounted by a nurse in oncology.

“When I was being trained they were like you need to go take a break and I was like no, I don’t want to take a break. And they were like, you need to go take a break because it’s not healthy. They were really on me about that because I would just plow through because I didn’t want to stay late. The workload is just too overwhelming and you’re trying to finish up instead of leaving the load for someone else. By taking 30 minutes when I could be working or charting, I’m wasting time by doing that”

Another surgical nurse said that “Putting that burden on someone just to watch your patient real quick can be a little bit, um...stressful, so I will avoid using the bathroom because of that. So it can be very hard.” An ER nurse summed up several of the major findings. “One nurse couldn’t take care of their five patients and then take care of another five patients so that someone could take a break. And that’s why no one does it, because you feel bad – I don’t want to put my five really sick patients on anyone else. It wouldn’t be safe. Then again, it’s not safe for nurses to work 12 hours and not eat and not drink.”

Other findings about break taking decisions had an influences on eating practices. When asked about whether taking a break impacted their eating habits, 17 (85%) respondents said yes. Fifteen nurses (75%) attributed taking an allotted break to eating better. A cardiology nurse responded that “If I actually do take a break and sit down, then I’m more likely to eat

something more substantial.” One of the rehab nurses reported that she normally picks up lunch. “If I take my break I usually eat better food because I actually go and pick it up and I eat a little bit slower in 30 minutes instead of just shoving bites of a sandwich and chomp and go.” An ER nurse said that she tries to sit down for 15 minutes when she can. “I think if I don’t take the time to properly eat, then I’m rummaging and end up eating stupid crap the balance of the shift.” A more extreme outcome that results from limited break time was reflected by an orthopedic nurse. “If I don’t take a break, then I only eat once per day and it’s at dinner” (upon returning home from her 12 ½ -13-hour shift).

Organizational Influences

The hypothesis that organizational influences on nurses’ eating habits include the presence of unhealthy “junk” food donations by patients and their families was supported. Reoccurring responses about patient and family donated food in the break room indicated that the food was generally of high sugar and fat content. It was reported to be “always there” and often times, the only option. According to a surgical nurse, “The typical food that’s offered in the break room are usually stuff like cake or cookies or candy. And you get the word – oh such and such family brought cake in and you run in and grab it and you’re on your way.” A maternity nurse reported that “If there are cookies lying around, I’ll have cookies. And honestly whatever garbage is lying around I’m happy to eat. It’s a lot of garbage.” The same holds true in oncology. “Yeah, there’s a lot of patient and family donated food. It’s always garbage.”

The influence of unhealthy food in the break room was also cited as a “go-to” food during stressful “bad shifts”. It’s an even greater temptation when late into the shift nurses have not eaten and have little time to spare. A cardiology nurse pointed out that “You know, people bring food and it’s usually junk like cookies which of-course is very appealing when you’re

starving and exhausted.” A maternity nurse recounted that “There is donated food and I’ll usually eat it”. A rehab nurse added that “It’s when the options are junk – chocolate, cookies, donuts, Dunkin frickin donuts – supersize me! Feed a fat nurse! And the more carbohydrates and sugar you give us, the more we need. It’s an addiction.”

The rehab nurse summed up why an ever-present supply of unhealthy food can be a barrier to eating practices. “Unfortunately, I do find myself subjected to the junk food that is brought in such as cookies, donuts. I know from my own self reflection regarding my diet that when I’m hungry, tired or stressed in that environment, or in pain for instance... if my body just hurts because I worked two days in a row, I tend to go for, I’m more driven toward carbohydrates and sugar.”

Public Policy Influences

Public policy influences on nurses’ eating habits are due to industry and hospital regulations that restrict food and beverages on the unit floor was partially supported. All 20 nurses in the study were aware of the food restrictions at the nurses’ stations. They reported that food is not permitted at the nurses’ stations (sometimes referred to as nurses’ desks), but four nurses were quick to add that water is permitted in three of the hospitals. Three nurses acknowledged that the food restriction policy is an infectious disease control issue. Another four nurses cited distance to the break room as a barrier to eating but the bigger issue was the barrier to drinking water. A nurse from surgical commented that “I think it’s wrong to not let us have at least a bottle of water. Having to walk to the kitchen to get your water isn’t convenient.” A rehab nurse found that “I do not consume adequate amounts of water during my shifts because it’s not allowed on the unit. One of the day nurses confessed that “Sometimes we

hide them (water bottles) behind the computers.” A night nurse observed that “...during the day, they’ll put their water bottles in the drawer.” All seven night shift nurses explained that minimal staffing at night prevented them from having break coverage for a meal. Therefore, there was an unofficial understanding that eating at the desk was consequently accommodated for the night shift.

Staying hydrated was described as a challenge for nurses in the study. A labor and delivery nurse said that “As far as thirst, I do find that I do not consume adequate amounts of water during my shifts because it’s not allowed on the unit.” Four nurses reported that they bring a large bottle of water to each shift and commit to drinking the whole bottle to make sure they hydrate sufficiently, acknowledging how difficult it is to stay hydrated in their working environment.

In addition to the food and water regulation as a major theme, an unanticipated barrier that emerged from the responses was a need for better staffing. Nurses were asked if there was anything the hospital could do improve the eating practices of nurses during their shift. Half of the nurses in the study responded that more adequate staffing would alleviate the difficulty in taking breaks and consequently improve their eating habits. “Currently we’re busting at the seams... morale is low because we’re understaffed” according to a surgical nurse. Another added that “Honestly, the only thing that I think could help would be to give us more staff. Give me an extra nurse and then at least I could maybe take a break, not necessarily 30 minutes full but at least a 15-minute break in the break room.”

Results - Aim #3:

Determine which levels of influence are most prevalent in affecting the eating practices of hospital nurses. *Hypothesis: Factors within the individual and interpersonal levels of influence are the most prevalent factors impacting the eating practices of hospital nurses. The hypothesis was partially supported.*

Hesitation to take breaks emerged as the dominant overarching theme based on the responses. The individual influence of prioritizing patients was combined with interpersonal influences including the perception of burdening other nurses and the behavioral norms of eating “quick foods” on-the-run. An unanticipated organizational barrier arose when nurses were asked how their supervisors and hospitals viewed their break taking norms. All but one nurse (who said she did not know) perceived that the hospital was aware of nurses’ inability to take full breaks. Over half recounted that their management and/or supervisor encouraged and expected them to take their breaks but that there was no apparent effort to ensure that the breaks would be taken. Two nurses believed that their units were autonomous and that they figured it out among themselves. ICU and psychiatry nurses both attributed the effective breaking norms to teamwork within their unit.

A predominant theme of a reluctance to take breaks represents an intersection of three levels of influence. The individual influence of nurses prioritizing their patients combines with the interpersonal influence of burdening fellow nurses and organizational influence of coverage policies. The original two levels of influence support the hypothesis but factors from the organizational and public policy levels should be considered in future research or practice. Obtaining coverage to take a break is discussed at length among professional online forums as a persistent challenge for nurses. An official policy regarding coverage for nurses’ breaks could

not be found but guidelines are posted on the Occupational and Health Administration (OSHA) website regarding “extended” work shifts. A shift that lasts longer than eight hours will result in reduced productivity and alertness. Additional break and rest periods should be provided. Managers and supervisors should “plan to have an adequate number of personnel available in order to enable workers to take breaks, eat meals...”, etc. (OSHA, 2016). A perceived staffing shortage as an additional theme within the organizational and public policy levels of influence arose from the responses and should also be further explored.

Chapter V

Discussion and Implications

Discussion

The aims of this study were to describe the working environment and eating practices of hospital nurses and to identify the factors that impact their eating behaviors. The hypothesis that nurses are unable to maintain self-reported satisfactory eating habits due to unpredictability of their routine and lack of control over workload was supported. A total of 13 (65%) of the nurses responded that their eating habits were unsatisfactory. All 20 nurses reported that they do not take their fully allotted break time and 12 (60%) half cited workload and patient needs as the main causes. Patient needs are ever present and disruption in daily routine was reported as being commonplace.

A study in the UK revealed that nurses did not perceive their working environment as being conducive to healthy eating due in large part to a failure to take breaks. Workload was attributed as a major detriment to their break taking inability (Faugier et al., 2001). Research on other working populations has also found time constraints to be a primary barrier toward healthful eating at work. In a study of work hours and young adult eating habits, insufficient time was cited as the most frequent barrier to healthful eating habits (Escoto et al., 2012). A qualitative study in the southeast U.S. on blue-collar working women found that lack of time was a consistent barrier to better eating and weight loss efforts while working (Tessaro et al., 1998).

The Social Ecological Model (SEM) levels of influence helped to distinguish which factors influenced nurses' eating habits during their shift. The hypotheses for all four factors were supported.

Individual – Attitudes about patient over personal care

When nurses were asked if they were able to attend to their personal needs during their shift, 13 (65%) reported that patient needs came before their own needs and that addressing self-care behaviors were routinely delayed. They communicated that prioritizing patient care over their own prevented them from taking a break when it was needed. Not only are nurses working longer hours, they are sacrificing break time to take care of patients (Witkoski et al., 2010). Studies about job satisfaction for nurses have revealed similar patient values – that the main factor behind their feeling of job satisfaction involves patient care (Atefi et al., 2014) and care for patients' families (Cortese, 2007). Previous qualitative research on nurses' views about work and retirement uncovered that a group of older nurses in the study (ages 50 – 65) placed a high value on working with patients and families (Valencia et al., 2010).

Organizational – The influence of unhealthy “junk” food

Another influence on eating habits was the presence of unhealthy “junk” food. Although there is limited research about the personal eating habits of nurses (Zapka et al., 2009), the research that does exist points to high fat and sugar consumption among hospital nurses on a regular basis (Cheung, 2003; Zapka et al., 2009). The preponderance of unhealthy food in the break rooms as reported in this study was also consistent with current healthcare trends. A recent initiative being launched by the National Health Service (NHS) in England demonstrates the unwanted prevalence of unhealthy “junk” food in hospitals and a quest to banish it. An April, 2016 article from the telegraph.co.uk revealed that the NHS, in an effort to “ditch” junk food consumption will begin offering incentives to hospital staff to remove junk food from their diets and mandates for hospital food vendors to change their menus (Donnelly, 2012). The NHS is the largest employer in the UK and is taking steps to reduce the costs of absenteeism and poor

health among its staff (NHS, 2016). The steps also include monetary incentives for hospitals that take action toward the health and well being of their employees like providing healthier food options and offering Zumba classes to doctors and nurses (BBC, 2015).

In the U.S., a report by the Physician's Committee for Responsible Medicine revealed that 20% of the 208 hospitals that were surveyed housed fast-food restaurants such as McDonald's and Wendy's. Similar findings were uncovered in a report about university-affiliated teaching hospitals (Ravella, 2016). Two major U.S. hospitals have taken steps similar to those in the UK. The Cleveland Clinic in Ohio discontinued a 20-year lease with McDonald's and removed the fryers from the hospital's food court. Montefiore Medical Center in New York took steps to eliminate fried food, trans fat and sugary beverages from hospital food venues (Ravella, 2016).

In a 2011 study of registered nurses' lifestyle habits including diet, 42.5% reported that they consumed high fat and sugar content foods daily (Malik et al., 2011). Patients and families are known to bring high sugar content food donations to nurses in hospitals (Cheung, 2003).

Interpersonal – Resistance to taking breaks

There is a dearth of research in the U.S. that is focused on the rest periods and meal breaks for hospital nurses (Witkoski et al., 2010). However, a national survey of nurses by the American Nurses Association (2009) found that 35% of the respondents reported taking a meal break rarely or never. The social norms of break taking behavior in this study are somewhat consistent in that eight (40%) of the nurses reported taking five minute breaks or no break at all, despite working between 12 and 15 hours. A study that examined shift length as it pertains to

safety and quality of care stated that “many nurses do not regularly take breaks during the workday” (Witkoski, 2013).

The habit of refraining from taking time to use the rest room was mentioned by approximately one third of the nurses. For those who regularly held off using the restroom, an interesting phenomenon was revealed. As quoted earlier, stretched bladders are commonplace according to a rehab nurse. Three acute care nurses mentioned the stretched bladder effect from holding in their fluids. Research on bladder distention is scant, but the Bladder and Bowel Foundation recommends against cutting down on hydrating which can make bladder problems worse. A weak bladder can lead to urinary incontinence (Bladder & Bowel Foundation, 2014).

Dr. Lori Noble, primary care physician at Spruce Internal Medicine in Philadelphia says that Urinary Tract Infections (UTIs) from holding one’s bladder can dangerously spread to the kidneys and bloodstream. She also pointed out that stress urinary incontinence can be another byproduct (Noble, 2015). Dr. Chamandeep Bali of the Toronto Naturopathic Health Clinic adds that when UTIs spread to the kidneys, it can cause even greater damage to the body (Patel, 2012). One nurse in the current study reported having had three UTIs in six months. Future study on nurses’ tendencies to delay personal needs should be explored, especially regarding the health implications of holding their bladders.

Public Policy – Industry and hospital regulations that prohibit food and water

All 20 nurses communicated a solid understanding of the food and water regulations in their hospital yet four of the nurses (other than night shift nurses) reported not having stringently adhered to them. Nurses from hospitals other than the three that allow water bottles preferred an accommodation for water. Four nurses said the policies originate with the Joint Commission and

one nurse reported that they come from the Occupational Safety and Health Administration (OSHA). The main hurdle regarding the nurses' station food ban was the distance to the break room, precluding nearly one third of the nurses from eating at all. According to the Environment of Care section of the Nursing Care Center on the Joint Commission Standards website:

“The Joint Commission has no standard that specifically addresses staff food or drink in patient care or staff work areas, to include nurse stations. Compliance with local or state authority is required, if applicable, per standard LD.04.01.01. For example, a number of states prohibit staff food and drink in clinical areas, requiring that they be consumed in break areas. Also, OSHA Blood borne Pathogen Standard prohibits food and drink in areas where contamination is likely.”

(Joint Commission, 2016)

A spokesperson from the Joint Commission confirmed that they do not impose any standards regarding food and beverages at the nurses' station but that hospitals use the OSHA regulations when determining organizational policy (Joint Commission, Personal Conversation. May 16, 2016). New Jersey state laws, regulations, or policies involving staff food and beverages for healthcare providers could not be found.

Implications

Future Research

Further research on a wider and broader population of nurses and hospitals could help to identify how eating practices are influenced and if similar themes emerge. A quantitative study could reach a larger sample population. Further questions about break taking norms, workload, day versus night shift work patterns and degree of hospital support should be explored. A larger sample could also delve more deeply into variations among units and between day and night shifts. Meaningful differences between nurses in Magnet and non-Magnet were not found due to

the small number of Magnet hospitals (three). A comparison between nurses of the same unit in Magnet designated versus non-Magnet hospitals may reveal further distinctions.

Practice

Additional insights were gained from responses to the question about what hospitals could do to help promote healthy eating practices for nurses. All 20 nurses offered suggestions. At the interpersonal level, two of the nurses who reported being satisfied with their eating habits also described that they worked closely with their fellow nurses in the unit as a team and efficiently coordinated break times. Camaraderie was mentioned as playing a key role in break coordination. In a separate unit, a nurse mentioned that when she found an opportunity to take a break, she would split her patients among two nurses to minimize the additional responsibility she was placing on each one. In a qualitative study about job satisfaction it was found that team cohesion was a major contributor to job satisfaction (Atefi et al., 2014).

An organized effort to encourage and train nurses within their unit to work together in order to coordinate breaks could go a long way toward improving the benefits of desirable eating habits, blending interpersonal and organizational influences together. Hospitals could add break time coverage strategy training as part of their ongoing education platform for nurses. A buddy system approach to providing break time coverage where the same, familiar nurses cover one another might be more acceptable to resistant nurses. A labor and delivery nurse described early indications of success from a new program in her hospital that encourages uninterrupted break time. Nurses are asked to respond to patient calls on behalf of the nurse on break so that the latter may remain on break for the fully allotted time.

Another unexpected insight came from the three nurses who were previously unsatisfied with their dietary practices but reported having become satisfied upon joining a structured eating program. By adopting plans like Weight Watchers and Jenny Craig, all three reported feeling significantly better physically and having more stamina. Night shift nurses in particular struggle with what to eat and when. They reported that a disciplined program helped them to identify regimented eating times and commit to nutrient dense foods. One of the nurses joined a weight management program that was promoted by the hospital for employees. A recent study of rotating night shift registered nurses shows a link between longer duration in working years and an increase in coronary heart disease (Vetter et al., 2016). Two of the nurses suggested that hospitals promote regimented diet and exercise programs to help nurses acquire healthier dietary practices.

It was also reported that two hospitals promoted a biggest loser challenge health initiative that was very well received regardless of whether weight loss was the goal. In both hospitals, the nurses from both shifts of a unit floor could create a team and compete to lose the most combined weight. One of the hospitals reportedly had a weigh-in day when healthy options dominated the cafeteria menu. Biggest loser participants were awarded with free healthy food that day of the week. More coordinated programs that foster unity while promoting healthy lifestyles could complement and reinforce the goals behind the Magnet designation.

In another hospital, it was reported that cafeteria staff would bring a cart up to the floor containing snacks for the nursing staff once a week. A similar program that expands upon that service could provide nurses with nourishment conveniently – literally within reach. It was suggested that if a snack cart initiative was prohibitive from a budgetary standpoint, nurses would likely be willing to spend money for a snack that was healthy and convenient. Notably,

18 (90%) of the nurses reported that their hospital cafeteria offered healthy options, yet 12 (60%) reported never getting food there. Hospitals have “stepped up their game” as one nurse described in providing a wider array of healthy foods for patients, families and other visitors. A focus toward making those options more available to their nursing staff could be similarly well-received.

A related popular suggestion was for hospitals to make fresh cut-up fruit and vegetables available to nurses. A rehab nurse represented a reoccurring theme: “For nurses, we need things that are physically convenient. I can’t eat a whole apple. I don’t have time. But maybe have cut-up fruit or vegetables with hummus.”

A number of additional initiatives at the organizational level could be instrumental. A need for more staffing, so that nurses could take sufficient break time to eat a healthy meal, was cited by 50% of the respondents and is an issue that hospitals may want to consider. Floater nurses when available were mentioned as being a valuable source of break relief. In an arbitration decision earlier this year that was filed by the Washington State Nurses’ Association (WSNA), Tacoma General Hospital was ordered to supply a float/relief RN for the “precise assignment” of relieving nurses to take a full and uninterrupted break (WSNA, 2016).

Policy

The issue of coverage straddles across all four levels of influence; public policy, organizational, interpersonal and individual. The healthcare industry could issue a mandate that uninterrupted break time is granted to nurses. Hospitals could establish coverage policies. Supervisors could oversee the practice of nurses covering for each other and ensure that breaks are taken. In some units, supervisors may be able to provide coverage themselves. From an

individual perspective, perceptions of burdening other nurses and temporarily relinquishing patient care must be addressed. A lack of coverage can lead to a perceived lack of control and have ripple effects in a nurse's shift. Workers who have a low control of their work environment are associated with a higher risk of future coronary heart disease (Bosma et al., 1997).

When nurses were asked about the role their supervisor played in their eating and breaking habits, another reoccurring theme emerged. More than half of the nurses responded that they were encouraged and expected to take breaks. Yet none of them reported that an effort was made to ensure that their break took place. Providing nurses with an opportunity to take a break is not a state or federal law. According to the U.S. Department of Labor, federal law does not require lunch or coffee breaks. New Jersey does not have laws to that effect, either. Nevertheless, ensuring break time for nurses can mitigate negative nurse and patient outcomes. A number of studies link long hours to errors and occupational injury (Clarke, 2007; Rogers, et al., 2004; Trinkoff et al., 2006 & Lipscomb, 2007). Trying to maintain a rigid schedule of breaks may not be realistic given the nature of hospital nursing, but reminders or direct coverage support by supervisors where applicable could help.

In future hospitals or renovations, a floor unit design that features a centralized break room could enable healthier eating practices. One nurse described the location of her unit's break room as being central to the patient rooms where it was convenient to stop in to take a drink of water or eat some cut-up fruit. Another nurse reported that the call bells could be heard in her unit's break room which enabled her to sit down for what could be as many as 20 minutes until a patient beckoned. Posting a sign at the nurses' desk encouraging patients and their

families to donate healthy rather than unhealthy food for the nurses could also be instrumental toward improving nurses' ability to eat more satisfactorily.

Intervention

An intervention designed to foster the ability for nurses to take meal breaks and maintain satisfactory dietary habits is recommended. Table 5-1 offers a comprehensive program with action steps and leverage points within the corresponding SEM level(s) of influence.

Table 5-1 Intervention for Hospital Nurses' Eating Practices

Action Step	Leverage Point	Level(s) of Influence
Implement training to encourage nurses to prioritize personal needs and mitigate perception of burdening other nurses	Management, Supervisors, Continuing Education platform	Individual, Interpersonal and Organizational
Engage nurses to collaborate on break coverage among themselves. Split coverage by assigning patients to more than one nurse. Promote team cohesion and camaraderie	Charge nurses, Experienced nurses	Interpersonal
Create policy for all staff to answer call bells and enable nurse to remain on break	Management, Supervisor	Interpersonal, Organizational
Require supervisory nurses to follow up with staff to be sure breaks are taken and provide coverage when possible	Hospital Administration, Supervisory nurses	Interpersonal, Organizational
Add staff or provide floater for sole purpose of providing break coverage	Hospital Administration	Organizational
Put signs up at nurses' station, gift shop and cafeteria requesting healthy food donations rather than junk food	Nurses' station, hospital gift shop, cafeteria	Organizational
Encourage hospitals to provide healthy lifestyle initiatives and wellness	Partner with local gym, Provide healthy options and in cafeteria and programs	Organizational
Provide healthy snack food delivery via cart service to unit floors	Cafeteria management, Hospital administration	Organizational
Work with hospital and Joint Commission to identify convenient, non-risk locations for nurses to eat food and drink water	Hospital Administration, Joint Commission, OSHA	Organizational, Public Policy

Limitations

This qualitative study involved a small sample of 20 women and a geographic region within New Jersey. The state of New Jersey is densely populated with a cross-section of urban, suburban and rural high volume hospitals, yet the hospitals within the study were predominantly suburban. A quantitative study of a larger, broader sample population could offer significant insight. Questions about race/ethnicity and educational background as potential influences might also provide greater insight. Other limitations to this study include the possibility of social desirability bias and the lack of inter-coder reliability. The need to further triangulate or validate some of the expressed concerns by nurses, particularly as they relate to environmental, policy, or industry regulations is another limitation to this study. Confirmation about policies, regulations or laws involving break coverage and the presence of food and beverages at the nurses' stations could clarify those ambiguities.

Conclusion

Based on size alone, the hospital nursing workforce is a relevant population outright, and especially so within the healthcare industry. Hospital nurses provide the essential service of helping patients prepare for critical procedures and recover from injury, disease, illness and trauma. The American Nurses Association, American Nurses Credentialing Center and hospitals around the county are committed to promoting a positive working environment for nurses. Yet, this study found that more hospital support is needed for the important lifestyle behavior of eating. Steps should be taken to address break taking social norms, coverage policies, and supervisory involvement within the hospital unit to ensure that breaks can be

taken. Efforts should be made to redirect patient food donations toward healthier offerings. Further research and work are both needed to support and promote nutritious dietary habits for hospital nurses. Hospital healthcare providers should work in an environment that embodies the promotion of good health to all within its scope – patients and employees alike.

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Appendix

A. Recruiting Email	80
B. Recruiting Telephone Script	81
C. Recruiting Flyer	82
D. Participant Consent Form	83
E. Interview Guide	85

Appendix A

Recruiting Email for Interview Participants

Dear ,

My name is Tina Monaghan and I am a graduate student in the School of Education and Human Services at Montclair State University. I'm pursuing a degree in Nutrition Education. Your name was suggested by as someone who may be willing to participate in a brief interview to help with a research study about hospital nurses.

I am seeking female nurses in North Central New Jersey who work a 12 hour shift in a hospital and who have been with their current employer for at least one year. I am studying the eating practices of nurses during their shift and would like to conduct a 15 minute interview with you at a time and location that are most convenient to you. I will be recording the interview and will dispose of the recording once I have transcribed it verbatim.

Your participation and interview responses will be confidential and there are no risks involved. There are also no direct benefits to you. However, your insights may provide information that could possibly provide meaningful support for hospital nurses in the future.

Please let me know if we can schedule an interview. I would be happy to call you or arrange it via email – whatever is best for you. If you have any questions, contact me at 551-655-4630 or tinamonaghan@mac.com

Thank you in advance for your consideration!

Sincerely,

Tina Monaghan

Follow Up Email

Dear (Potential Research Subject),

I am writing to follow up on the email I sent you (below) a couple of weeks ago asking if you would consider participating in a 15 minute interview for a research study. If you have a moment now, please let me know if you are willing to participate.

Thank you!

Sincerely,

Tina Monaghan

Graduate Student – Montclair State University Nutrition and Food Science Program

Appendix B

Recruiting Telephone Call for Interview Participants

Hello! My name is Tina Monaghan and I am a graduate student in the School of Education and Human Services at Montclair State University. I'm pursuing a degree in Nutrition Education. As you probably know, _____ suggested that I call you to see if you might be willing to help me with a research study by participating in a 15 minute interview. I'm studying the eating practices of hospital nurses during their shift. May I tell you more about it?

I am looking for female nurses in North Central NJ who work in a hospital environment and have worked for their current employer for at least one year. My research study is entitled "Factors Influencing the Eating Practices of Hospital Nurses During their Shift".

Your participation would be confidential and there are no risks involved. There are also no direct benefits to you but your insights may provide information that could possibly provide meaningful support for nurses in the future. Would you be willing to do the interview?

If yes: Great! Thank you! Have you worked with your current employer for at least one year? Is the length of your shift 12 hours? The interview should last no more than 15 minutes and I'd be happy to meet you at a time and location that are most convenient to you. In order to capture all of the pertinent information from your responses, I would like to record the interview. Is that OK? When and where would you like to meet?

If no: OK, I completely understand and thank you anyway. Is there someone you know who might be willing to participate? If so, may I contact them or send you an email to forward along?

Thank you for your time!

Thank you Note

Dear Research Participant (Name),
Thank you very much for participating in the interview we conducted. Your time and insight will make an important contribution to my research effort. I know how busy you are and really appreciate you help.

Thank you again,
Tina Monaghan

Do You Work a 12 Hour Shift?
Research Participants wanted to understand eating practices at work.



- We are looking at how female hospital nurses in North Central New Jersey eat and take breaks during a 12 hour shift.
- Nurses should have one year of experience with their current hospital.
- This study will take 15 minutes, during one session.
- Participants will receive a free collection of healthy snacks and recipe ideas.

Tina Monaghan, Graduate Student in the College of Education and Human Services, Food and Nutrition Science Program is conducting this study. If you are interested in participating or have more questions, please contact her at

Cell: (551) 655-4630 or Email: monaghant1@montclair.edu

This study has been approved by the Montclair State University Institutional Review Board, study #FY15-16-97.



MONTCLAIR STATE

UNIVERSITY



CONSENT FORM FOR ADULTS

Please read below with care. You can ask questions at any time, now or later. You can talk to other people before you sign this form.

Study's Title: Factors Influencing the Eating Practices of Hospital Nurses During Their Shifts

Why is this study being done? In order to examine whether the eating practices of nurses during their shifts are sufficient enough to provide the energy they need to carry out their job responsibilities to the best of their ability. The environmental and personal factors that influence their consumption decisions will also be explored.

What will happen while you are in the study? You will be asked questions about your eating habits at work. The interview will be recorded so that all pertinent information is fully captured.

Time: This study will take about 15 minutes.

Risks: There are no risks involved in this interview.

Although we will keep your identity confidential as it relates to this research project, if we learn of any suspected child abuse we are required by NJ state law to report that to the proper authorities immediately.

Benefits: There are no direct benefits to you for being in this study.

Others may benefit from this study because little is known about what factors influence the eating habits of nurses and this study will help to increase the information available on this topic. In addition, the results of this study will provide a better understanding of the unique needs of hospital nurses at work and may help to inform hospital on how to enhance support for their nurses.

Compensation

To compensate you for the time you spend in this study, you will receive a bag of healthy, convenience-sized snack foods and recipe cards.

Who will know that you are in this study? You will not be linked to any presentations. We will keep who you are confidential.

Do you have to be in the study?

You do not have to be in this study. You are a volunteer! It is okay if you want to stop at any time and not be in the study. You do not have to answer any questions you do not want to answer. Nothing will happen to you. You will still get the bag of snacks and recipes that were promised.

Do you have any questions about this study? Please call researcher, Tina Monaghan at 551-655-4630 or email her at tinamonaghan@mac.com or Primary Investigator Dr. Dinour at 973-655-5395 or dinourl@montclair.edu

Do you have any questions about your rights as a research participant? Phone or email the IRB Chair, Dr. Katrina Bulkley, at 973-655-5189 or reviewboard@mail.montclair.edu.

Future Studies

It is okay to use my data in other studies:

Please initial: _____ Yes _____ No

Study Summary

I would like to get a summary of this study:

Please initial: _____ Yes _____ No

As part of this study, it is okay to audiotape me:

Please initial: _____ Yes _____ No

One copy of this consent form is for you to keep.

Statement of Consent

I have read this form and decided that I will participate in the project described above. Its general purposes, the particulars of involvement, and possible risks and inconveniences have been explained to my satisfaction. I understand that I can withdraw at any time. My signature also indicates that I am 18 years of age or older and have received a copy of this consent form.

Print your name here

Sign your name here

Date

Tina Monaghan, Principal Investigator

Signature

Date

Dr. Lauren Dinour, Faculty Sponsor e

Signature

Date

Factors Influencing the Eating Practices of
Hospital Nurses During their Shift

Interview Questions

DEMOGRAPHIC*

1. What hospital do you work for?
2. What department or unit are you in?
3. For how many years have you worked as a hospital nurse?
4. What is your age range?
 - a. 20 – 29 years
 - b. 30 – 39 years
 - c. 40 – 49 years
 - d. 50 – 59 years
 - e. 60 + years

INDIVIDUAL

5. Approximately how many patients do you typically cover?
6. Can you describe some of your primary responsibilities?
7. Tell me about your shift. How many hours is your shift comprised of?
Follow Up: Do you work day or night shifts?
8. How would you describe the level of activity throughout your shift?
9. During a typical shift, describe what types of food you consume.
Follow Up: What do you eat before and after your shift?
10. Of the following six food and beverage sources, where does your food come from and how often do you consume it?
 - a. Cafeteria? Does it offer healthy options?
 - b. Break room? “ “ “
 - c. Bring from home? “ “
 - d. Order out? “ “ “
 - e. Vending machines? “ “
 - f. Patient/Family donated food? “

11. How satisfied or unsatisfied are you with your eating and drinking habits at work?
Follow up: Please explain.
12. How, if at all, do you address personal needs during your shift (for example, when you're hungry, thirsty, tired, need to use the restroom, etc.)?

INTERPERSONAL/COMMUNITY

13. How do other nurses in your unit address personal needs during their shift?
14. How do other nurses influence your eating practices, if at all?
15. Tell me about your breaks with respect to length and frequency.
Follow Up: Do you take your breaks?

ORGANIZATIONAL

16. Is there a policy for nurses to cover one another in order to take a break?
Follow up: What are your thoughts about that?
17. Does whether or not you take your break impact your eating habits in any way?
18. What is your supervisor's position on eating and taking breaks?

POLICY/ENVIRONMENTAL

19. What is your hospital administration's position on the eating and breaking norms in your unit or on your floor?
20. Are there rules and regulations regarding the presence of food and beverages on the floor?
Follow Up: How about in the nurses' station and break room?
21. Is there anything your supervisor could do to support healthy eating practices of nurses in your unit?
22. What could your hospital do to support healthy eating practices?
Follow Up: Is there anything hospitals could do to make healthy options more available? Are there ways they could make healthy options convenient?

**Category headings reflect most but not necessarily all types of questions within each category due to question sequence.*