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Discharge Education in the Emergency Department: Are We Effectively Teaching Chest Pain Patients?

Emily Edwards Nishiyama
Gardner-Webb University

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Discharge Education in the Emergency Department:
Are We Effectively Teaching Chest Pain Patients?

by

Emily Edwards Nishiyama

A thesis submitted to the faculty of
Gardner-Webb University School of Nursing
in partial fulfillment of the requirements for the
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Submitted by:

Approved by:

Emily Nishiyama

Sharon Starr, PhD, RN

Date

Date

Abstract

Millions of individuals visit the emergency department (ED) each year with complaints of chest pain. Many chest pain patients do not have an underlying condition of Acute Coronary Syndrome (ACS) but the health and well-being of these patients is indispensable. Research has indicated soaring costs, an increased demand in medical resources, and an increasingly poor quality of life for these patients after discharge. Although research encourages quality education at discharge, very few studies have been conducted on ED discharge education for non-ACS chest pain patients. Using a cross-sectional descriptive research design, this quantitative study discovered the frequency of education provided on important cardiovascular health topics and attitudes toward health promotion activities for non-ACS chest pain patients at discharge. Using the Preventive Medicine Attitudes and Activities Questionnaire (PMAAQ), the study's sample consisted of 30 ED nurses at a small hospital in the southeastern United States. Dorothea Orem's Self-Care Deficit Nursing Theory (SCDNT) served as a guide in steering this study. Results indicated that nurses often educate on smoking cessation, medication adherence, and blood pressure control. Many ED nurses viewed their education as minimally effective but were able to indicate important educational topics for these patients. Lack of time was the greatest barrier to discharge education that ED nurses reported. This research study recognized both strengths and weaknesses in current discharge education practices. The improvement of education for non-ACS chest pain patients in the ED setting will impact their quality of life, health, and well-being after discharge.

Keywords: discharge education, emergency department, non-acute coronary syndrome, chest pain

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TABLE OF CONTENTS

CHAPTER I: INTRODUCTION

Problem Statement	2
Significance.....	3
Purpose.....	3
Theoretical Framework	4
Research Question	5
Definition of Terms.....	5
Summary	6

CHAPTER II: LITERATURE REVIEW

Literature Related to Statement of Purpose	7
Literature Related to Theoretical Framework.....	12
Strengths and Limitations of Literature	19
Summary	20

CHAPTER III: METHODOLOGY

Implementation	21
Setting	22
Sample.....	23
Design	23
Protection of Human Subjects	25
Instruments.....	25
Data Collection	26
Data Analysis	27

Summary	28
CHAPTER IV: RESULTS	
Sample Characteristics	30
Major Findings	33
Summary	51
CHAPTER V: DISCUSSION	
Implication of Findings	52
Application to Theoretical Framework	61
Limitations	63
Implications for Nursing	64
Recommendations	65
Conclusion	66
REFERENCES	67

List of Tables

Table 1: Frequencies for Demographic Data32

Table 2: Frequencies for Education Provided on Overall Cardiovascular Health Issues ..35

Table 3: Frequencies for Education Provided on Weight Management37

Table 4: Frequencies for Education Provided on Smoking Cessation.....39

Table 5: Frequencies for Education Provided on Blood Pressure Control41

Tablet 6: Frequencies for Perceived Effectiveness43

Table 7: Frequencies for Perceived Importance45

Table 8: Frequencies for Perceived Comfort47

Table 9: Frequencies for Perceived Barriers.....50

CHAPTER I

Introduction

The Emergency Department (ED) in hospitals is a source of medical care that empowers people through healthcare knowledge to ensure healthier and more fulfilling lives. Individuals of all ages, ethnicities, and medical backgrounds utilize the ED each day for a variety of services given by nurses and doctors.

According to the 2009 National Hospital Ambulatory Medical Care Survey (NHAMCS), 136.1 million individuals visited the ED within that year and 12.6% of these individuals were subsequently admitted to the hospital (United States Centers for Disease Control and Prevention, 2012). Statistics showed that 5.8 million patients visit the ED annually for chest pain and related symptoms and about 4.4 million for chest pain alone (LaSalvia, Nadkarni, & Bal, 2010). Nearly 79% of chest pain patients who visit the ED are low risk or have no underlying Acute Coronary Syndrome (LaSalvia et al., 2010). Overall, visits for chest pain and relating symptoms are the second most common reason for presenting to the emergency department (LaSalvia et al., 2010).

In terms of costs, “a hospital with an annual chest pain ED visit volume of 2,500, of which 65% or more are non-ACS patients, could spend at least 7.8 million dollars managing these low-risk patients” (LaSalvia et al., 2010, p. 26). This amount of money spent is based on the estimated costs of 400 dollars per hour for a 12 hour ED visit that includes telemetry usage, staff, and observation time costs (LaSalvia et al., 2010).

Nearly 85% of all patients visiting the ED for chest pain are discharged home with a non-cardiac diagnosis, and as many as 19% of chest pain patients return to the ED

within three months of their initial visit (LaSalvia et al., 2010). As low-risk, or non-ACS, chest pain patients are discharged, the morbidity and mortality rate is two to three times higher than those admitted to the hospital (Gerber, Kontos, & Kantor, 2010).

Problem Statement

The high volumes of chest pain patients seen in the ED, the costs associated with these patients, and the quality of life after their visit emphasizes the importance of patient education at discharge. In the ED setting, nurses are often left with the responsibility of empowering patients and their families with the knowledge, skills, and self-awareness to influence their own health behaviors (Han, Barnard, & Chapman, 2009a). The ED setting is often an individual's first and only access to the health care system and their recovery at home could be jeopardized without appropriate health promotion and patient education at discharge (Taggart, 2009).

The ED environment poses many barriers to nurses toward the frequency of discharge education given on important cardiovascular health topics and their attitudes toward health promotion activities for chest pain patients. ED nurses often face a heavy workload and an inadequate nurse to patient ratio (Han et al., 2009a). This obstacle leaves nurses uninterested in the patient's post-discharge care and puts the patient at a disadvantage in receiving appropriate discharge instructions (Han et al., 2009a). The ED is a noisy, crowded, and chaotic environment that impacts quality communication (Gozdzialski, Schlutow, & Pittiglio, 2012). Without the acknowledgement of patients' lack of readiness for education in patients and their families, nurses may cause the patients to become overwhelmed and unfocused (Gozdzialski et al., 2012). Nurses also face obstacles due to the variety of demographics in regards to age, educational

backgrounds, and socioeconomic levels. These differences cause the discharge education and health promotion process to be difficult and complex to ensure that patients' specific needs are addressed (Han et al., 2009).

Significance

According to the University of California Los Angeles Chest Pain and Acute Coronary Syndrome Patient Management Guide, issues such as smoking cessation, weight management, blood pressure control, physical activity, diet, use of prescribed medications, monitoring for warning signs of an impending heart attack, and follow-up care with a primary care physician or a cardiologist should be discussed with patients and their families at discharge (Fonarow, 2005). While it has been proven that detailed patient education can reduce the time to treatment in the event of an acute myocardial infarction (MI), not providing comprehensive education at discharge may result in unnecessary repeat visits for the patient (Fonarow, 2005). Investigating both the amount of education provided on cardiovascular health topics and the nursing attitudes toward health promotion activities for non-ACS chest pain patients in the ED can help to expose weaknesses in discharge education so that the lack of understanding by patients and their families can be prevented (Fonarow, 2005).

Purpose

The purpose of this MSN thesis was to understand how ED nurses are encouraging overall well-being in non-ACS chest pain patients through health promotion and education at discharge. The incorporation of the Preventive Medicine Attitudes and Activities Questionnaire (PMAAQ) within this study helped to investigate the frequency of education given on cardiovascular health topics at discharge, such as weight

management, smoking cessation, blood pressure control, stress management, exercise, and healthy dietary choices. This study also explored ED nurses' attitudes based on their perceived effectiveness, importance, comfort level, and barriers toward promoting and educating about cardiovascular health. This research study helped to recognize the improvements needed in patient education and to discover how patients with non-ACS chest pain are empowered to perform self-care toward their own health and well-being.

Theoretical Framework

The use of concepts from Dorothea Orem's Self-Care Deficit Nursing Theory (SCDNT) served as the theoretical framework for the research investigation. The SCDNT promotes concepts such as self-care demands, interactive nurse-to-patient relationships, and nursing systems to meet patients' needs (Kumar, 2007).

Orem's theory emphasizes the fulfillment of therapeutic self-care demands as it helps patients to maintain their health, life, and well-being (Kumar, 2007). Fulfilling self-care demands also involves the concept of self-care agency, which is the power of individuals to engage in self-care and their capability for self-care (Kumar, 2007). A nursing agency, or plan of care, can be utilized to overcome deficits when a patient presents with self-care shortfalls (Kumar, 2007).

Once a nursing agency has been activated, an interactive nurse-to-patient relationship is developed to meet patients' therapeutic self-care demands (Kumar, 2007). Wholly compensatory, partly compensatory, and supportive-educative are three types of nursing systems created by Orem (Kumar, 2007). The supportive-educative system best applies to the topic of this proposed research study as it relates to the enhancement of

self-care actions through individualized, patient-focused nursing care (Armer et al., 2009).

Orem's theory supports the notion that education at discharge should inform, strengthen, and empower patients by promoting self-care practices at home (Surucu & Kizilci, 2012). The SCDNT promotes the identification of knowledge deficits, the implementation of nursing care with a goal to improve self-care behaviors, and the promotion of positive changes to improve the health of patients (Surucu & Kizilci, 2012). This theory served as a tool for evidence-based practice and as a theoretical backbone toward the study of health promotion and patient education for those being discharged with non-ACS chest pain.

Research Question

Given the importance of health promotion and effective patient education at discharge, the following research questions were proposed:

1. How often do ED nurses teach about important cardiovascular health topics at discharge for patients treated for non-ACS chest pain?
2. What are the attitudes of ED nurses toward health promotion and education at discharge for patients treated for non-ACS chest pain?

Definition of Terms

Acute coronary syndrome (ACS) can be defined by electrocardiography (ECG) and cardiac biomarker measurements (LaSalvia et al., 2010). "ACS results from either temporary or permanent obstruction of coronary arteries and includes unstable angina (temporary obstruction without cell death), acute myocardial infarction (obstruction leading to cell death), and sudden cardiac death" (LaSalvia et al., 2010, p. 21). For the

purpose of this study, non-ACS chest pain patients are those that have no electrocardiographic abnormalities, no elevation in cardiac injury markers, and no history of cardiac issues (Gerber et al., 2010).

Summary

The prevalence of patients visiting the ED with chest pain, the rising costs associated with these visits, and the quality of life for these patients after discharge underlines the importance of health promotion and education at discharge for non-ACS chest pain patients. Although the ED presents many challenges for nurses, appropriately educating non-ACS chest pain patients may help to reduce unnecessary costs, decrease repeat visits, and maximize recovery and well-being at home. Gaining an understanding of how often nurses educate on important cardiovascular topics and how they perceive health promotion and educational activities at discharge has helped to identify improvements needed toward the education for non-ACS chest pain patients.

CHAPTER II

Literature Review

Reviewing current nursing literature served as a source of purpose and direction for this research study. Recognizing current nursing research, discovering theory-driven literature, and identifying both strengths and weaknesses in nursing research facilitated the literature review for this MSN thesis.

The goal of this research study was to gain an understanding of how nurses are promoting health and well-being during discharge education for patients treated for non-ACS chest pain. The interest in learning how often nurses discuss important cardiovascular topics and their attitudes toward health promotion activities at discharge created a push to gather supporting theoretical concepts and nursing literature.

The literature review was conducted through the use of various online tools and resources. EBSCO*host*, PubMed, and ScienceDirect were the most common online research databases used for the review of nursing research. Keywords utilized to assist in the review included discharge education, patient education, chest pain, emergency department, and cardiovascular care.

Literature Related to Statement of Purpose

Current nursing research suggests a correlation between effective education and optimal patient outcomes after discharge from the hospital. For this particular research study, the quality of health promotion and education provided to non-ACS chest pain patients was observed on the basis of how often education is provided and the nursing perceptions toward educational activities at discharge. Similar studies have been

conducted that portray the importance of discharge education and health promotion activities.

Using a prospective, longitudinal, observational research design, Weiss, Yakusheva, and Bobay (2011) conducted a study to test the relationships between unit-level nurse staffing variables, patient-reported quality of discharge teaching process, patient-reported readiness for hospital discharge, and post-discharge utilization of readmission and ED visits and related cost-benefit. The sample size was 1,760 patients and the goal was to obtain a study sample representing the spectrum of patients admitted to acute care hospitals for medical-surgical conditions (Weiss et al., 2011). Results from this study found that a greater amount of time spent with patients led to higher quality of care and lower post-discharge utilization costs (Weiss et al., 2011).

In a randomized, controlled study conducted by Koelling, Johnson, Cody, and Aaronson (2005), researchers hypothesized that a patient discharge education program would improve clinical outcomes in patients with chronic heart failure. During their study, researchers utilized 223 systolic heart failure patients to compare the difference in outcomes between those that received a standard discharge process and those that received an additional one-hour, one-on-one teaching session with a nurse educator at discharge (Koelling et al., 2005). Results found that a one-hour, nurse educator teaching session at discharge improved clinical outcomes, increased self-care measure adherence, and reduced cost of care in patients with systolic heart failure (Koelling et al., 2005).

An observational research study performed at a skilled nursing facility (SNF) investigated the effects of implementing a certification program for chronic heart failure patients to reduce 30 hospital readmissions (Fearon-Clarke, Kleet, Bonnet, & Sheris,

2011). A total of 132 SNF patients, in addition to their families, were provided with newly executed educational programs given by nurses to educate on the disease process of heart failure, treatment options, and lifestyle changes (Fearon-Clarke et al., 2011). The conclusion of this research study discovered lower readmission rates and improved patient outcomes in heart failure patients as a result of this newly implemented educational program (Fearon-Clarke et al., 2011).

Malcom (2012) published a study presenting the benefits of a readmission reduction program implemented in a hospital system with high readmission rates for patients treated for congestive heart failure, pneumonia, and myocardial infarctions. During the course of their observational study, researchers examined the records of patients admitted within 30 days and interviewed them to determine the reasons for the readmissions (Malcolm, 2012). Researchers found that many individuals did not understand their disease, the importance of follow-up visits with their primary care physician, and why they should follow their treatment plan (Malcolm, 2012). Nurses were encouraged to allow time for patients to ask questions and to engage in frequent communication toward any medication changes, lifestyle alterations, and continued medical care after discharge (Malcolm, 2012). The execution of this readmission reduction program ultimately resulted in lower readmission rates and better clinical outcomes (Malcolm, 2012).

Bench, Day, and Griffiths (2013) conducted a literature review on the impact of patient outcomes as a result of effective verbal and/or written critical care discharge information addressing patients' physical outcomes (disease process, recovery time, common complications) and psychosocial outcomes (satisfaction, anxiety, self-care

management at home). In addition to both qualitative and quantitative discharge information given to patients, seven publications were included in the review (Bench et al., 2013). A total of 121 patients, 252 relatives, and 33 nurses were addressed in the review of data (Bench et al., 2013). The progression of this research study led to results emphasizing the importance of quality education through the incorporation of multiple teaching methods (Bench et al, 2013). Researchers of this study discovered a trend toward well-designed written information booklets, combined with effective verbal information provision, may increase psychosocial well-being and a physical recovery for patients (Bench et al, 2013).

Irmak and Fesci (2010) performed an investigation on the benefits of a nurse-managed secondary prevention program at the time of discharge for hospitalized patients who had experienced a myocardial infarction (MI). The quasi-experimental research study utilized 26 post-MI patients and focused on how thorough methods of assessment, education, health promotion activities, discussion, follow-up, and referrals to other medical specialists impacted lifestyle changes and modifiable risk factors (Irmak & Fesci, 2010). “Results of the program showed that the mean systolic and diastolic blood pressure, total cholesterol, low-density lipoprotein cholesterol, body mass index, and the number of smokers had decreased and that the number of participants being more attentive and careful concerning their eating habits and exercising regularly had increased” (Irmak & Fesci, 2010, p. 147).

During a research study conducted by Han, Barnard, and Chapman (2009b), the perceptions and attitudes of ED nurses were analyzed toward education and health promotion activities at discharge. Utilizing a qualitative approach, 32 ED nurses were

required to engage in phenomenography to describe their feelings toward current discharge education practices from the ED (Han et al., 2009b). Findings of the study revealed that ED nurses are often aware of the importance of patient education at discharge but are often prevented from fulfilling the educative role (Han et al., 2009b). This research study recognized that nurses are often faced with having to fulfill multiple roles simultaneously and are left with heavy workloads and insufficient time for health promotion and discharge education activities (Han et al., 2009b).

A patient-centered study was performed to assess patient understanding of ED discharge instructions (Gignon, Ammirati, Mercier, & Detave, 2014). During the course of this qualitative research study, 36 patients recently discharged from an ED were interviewed based on their level of satisfaction and understanding of discharge instructions given (Gignon et al., 2014). Results found that despite patients' high levels of satisfaction with communication in the emergency department, nearly 50% of patients failed to comply with important discharge information and reported difficulties understanding their drug prescription (Gignon et al., 2014). Although many patients were satisfied with the time spent explaining discharge instructions, some patients admitted they did not intend to fully comply with the medical diagnosis and prescription (Gignon et al., 2014).

Another study on patients was conducted to evaluate the understanding of prescribed medications after receiving discharge education in the ED (Bulut, Tanrikulu, Dal, & Kapucu, 2013). Participants of the study consisted of 63 patients that visited the ED between the hours of 8 a.m. and 8 p.m. during a period of one month (Bulut et al., 2013). A questionnaire on participants' understanding of discharge education was given

and found the following: 37% of the patients had no knowledge at all about the prescribed medications, 61.9% had knowledge of when to take the medications, 57.1% knew the purpose of the particular medications, 52.3% were aware of the appropriate dosage, 31.7% knew the name of the medications, and 25.3% knew something about their prescribed course (Bulut et al., 2013). At the conclusion of the study, it was suggested that compliance with treatment plans, a decrease in re-hospitalization rates, and a better understanding of learning material may occur by utilizing written information during discharge teaching and spending more time on educating patients at discharge (Bulut et al., 2013).

The prevalence of knowledge deficits after discharge education was researched in a study using phone interviews (Engel et al., 2012). Patient knowledge in 159 adults were surveyed based on the domains of diagnosis, medications, home care, follow-up, and return instructions (Engel et al., 2012). “Knowledge was determined based on the concordance between direct patient recall and diagnosis-specific discharge instructions” (Engel et al., 2012, p. 1035). Results found the greatest amount of knowledge deficiency in home care instructions (80%) and in return instructions (79%) (Engel et al., 2012). Researchers of this study concluded that while knowledge deficits in discharge education may lead to implications in adherence and outcomes after discharge, a greater emphasis is needed toward investigating improvements in discharge education to facilitate better communication to patients (Engel et al., 2012).

Literature Related To Theoretical Framework

The review of current nursing literature supports the notion that health promotion and discharge education can empower patients to take control of their own health and

well-being. Incorporating concepts from Dorothea Orem's Self-Care Deficit Nursing Theory (SCDNT) within this research study provided a theoretical basis for the importance of understanding how patients' self-care needs are met. The review of nursing research relating to Orem's theory provided a greater understanding of how health promotion activities and discharge education can be supported by concepts of the SCDNT.

A study performed by Zavala and Shaffer (2009) utilized Orem's SCDNT by addressing the presence of self-care deficits after discharge. Utilizing a phone interview, follow-up phone calls were made to 50 participants on the day after discharge to inquire how they were doing and whether they had questions about their discharge instructions (Zavala & Shaffer, 2009). At the conclusion of their study, results indicated that one-third of patients discharged from the ED after one day had substantive questions regarding their written discharge instructions, prescribed medications, and follow-up appointments (Zavala & Shaffer, 2009). Researchers of this study suggested that failing to address patient needs and providing quality education at discharge could contribute to unnecessary discomfort or worsening of symptoms requiring additional medical attention (Zavala & Shaffer, 2009).

Surucu and Kizilci (2012) conducted a case study observing the use of Orem's SCDNT in diabetes self-management education. The subject selected for this case study was a female patient of a diabetes education center (Surucu & Kizilci, 2012). The participant was followed for three months and was provided diabetes self-management education (Surucu & Kizilci, 2012). Researchers of this study used Orem's SCDNT to incorporate process identification, goal setting, planning, implementation, and evaluation

steps (Surucu & Kizilci, 2012). Results indicated that self-care behavior was improved upon as the patient was able to explain and discuss the diabetes disease process, healthy nutrition options, physical activity recommendations, drug therapy, and blood-glucose monitoring (Surucu & Kizilci, 2012).

Based on the dialogue between five health professionals and their patients, Tveiten and Meyer (2009) utilized transcript-based qualitative analysis to investigate how health professionals engage in the empowerment process. As the SCDNT emphasizes empowerment of patients by promoting self-care practices, this research study focused on how healthcare professionals promote an individual's ability to make decisions and to have control over his or her personal life (Tveiten & Meyer, 2009). At the conclusion of the study, results indicated that health professionals often empower patients by allowing patients to participate in healthcare decisions and to act as an equal partner of the healthcare team (Tveiten & Meyer, 2009). Outcomes of the study also revealed that health professionals empower patients through active listening and open dialogue allowing patients to tell their stories with sufficient time (Tveiten & Meyer, 2009).

A descriptive explorative study conducted by Manzini and Simonetti (2009) utilized Orem's SCDNT for hypertensive patients based on the concept of the utilization of a plan of care. Researchers conducted face-to-face interviews with 36 individuals that were diagnosed with hypertension at a local teaching health center (Manzini & Simonetti, 2009). Initially, nurses identified deficits in knowledge toward modifiable risk factors, such as a high-fat or high-sodium diet, stress, obesity, sedentary lifestyle, and tobacco use (Manzini & Simonetti, 2009). Once self-care deficits were identified, nurses were able to plan patient care and educate on hypertension and the pharmacological therapies, lifestyle

modifications, and other treatment options (Manzini & Simonetti, 2009). At the conclusion of this study, researchers found that the use of Orem's SCDNT enabled nurses to easily identify health deviations and self-care deficits and provide better education and interventions toward patients diagnosed with hypertension.

Clark et al. (2005) conducted a study that addressed patients' viewpoints and satisfaction with the implementation of Orem's SCDNT in the hospital setting and patient education at discharge. Researchers utilized data from questionnaires over a four year time period from 1,290 acute care facilities across all 50 states (Clark et al., 2005). A total of 4,901,178 surveys were collected during the period of the research study (Clark et al., 2005). As researchers surveyed patient perceptions of the quality of discharge instructions given by their ratings of care and service, results found that patients value discharge instructions promoting self-care at home (Clark et al., 2005). Statistical results of this study indicated a strong, positive correlation between quality discharge instructions for care at home and patient perceptions of the discharge process (Clark et al., 2005).

Shahrbabaki, Farokhzadian, and Hasanabadi (2012) performed a study that observed how Orem's self-care concept was utilized on patients discharged from inpatient hospitalization for congestive heart failure. During the course of this experimental research study, 40 patients were divided into the following two groups: those that received the self-care discharge education program (independent variable) and those that received routine discharge education (dependent variable) (Shahrbabaki et al., 2012). While those in the control group did not receive supplemental education, the group of patients that received self-care discharge education were provided four 15 to 20

minute education sessions and an educational pamphlet encouraging self-modifications toward drug regimens, healthy dietary choices, daily weights, and physical activity (Shahrbabaki et al., 2012). One month after discharge, patients' awareness and performance was analyzed through interviews and observations (Shahrbabaki et al., 2012). Results indicated that patients who received self-care education had significantly higher scores than the control group in regards to their knowledge on how to take care of themselves (Shahrbabaki, et al., 2012). The outcome of this study reinforced the notion that Orem's concept of self-care education enhances awareness and performance in heart failure patients (Shahrbabaki et al., 2012).

In a research study investigating the level of self-care and supportive educative needs of patients discharged with a MI, Orem's theory was implemented to gather information toward the quality of life for these patients (Mohammadpour, Sharghi, Khosravan, & Alami, 2009). A questionnaire based on Orem's model was utilized to survey 100 patients recently hospitalized for a MI based on the domains of knowledge, motivation, and skill (Mohammadpour et al., 2009). Results indicated that the level of self-care was 58% in knowledge domain, 42% in motivation domain, and 44% in skill domain (Mohammadpour et al., 2009). Outcomes of the research study also concluded that the level of self-care among patients suffering from myocardial infarction is far from the favorable level, therefore indicating that self-care training and support based on Orem's theory will increase patients' self-care ability (Mohammadpour et al., 2009).

Peterson et al. (2013) performed a longitudinal research study to investigate the benefits of a self-management educational approach in teaching patients diagnosed with coronary artery disease (CAD). Throughout the course of the 12-month study, concepts

supporting Orem's SCDNT were utilized to identify self-care deficits in 225 patients and develop a plan of care tailored to overcome these deficits. Initially, interviews were conducted with patients to identify self-care deficits and needs (Peterson et al., 2013). Once the interviews were complete, researchers created a workbook based on the underlying themes that emerged from the interviews (Peterson et al., 2013). Patients were provided the workbook for a 12-month period and were, subsequently, evaluated based on their experience and use of the book (Peterson et al., 2013). After this 12-month period, results found that readers felt that the workbook provided practical health information, enhanced behavior-specific self-efficacy, and reinforced healthy behaviors (Peterson et al., 2013). Outcomes also indicated that participants who read the workbook had greater within-patient increases in physical activity compared to non-readers (Peterson et al., 2013). This particular research study demonstrated how a self-care or self-management educational approach can provide comprehensive and effective disease-specific health information for patients with CAD (Peterson et al., 2013).

In a study on patients with chronic heart failure, Halmo, Galuszka, Langova, and Galuszkova (2013) employed concepts of self-care demonstrated by Dorothea Orem's SCDNT. This research study consisted of a questionnaire given to 47 heart failure patients based on seven concepts from Orem's self-care theory asked in closed format questions (Halmo et al., 2013). These concepts included seeking appropriate medical assistance, being aware of effects and results of pathological conditions, effectively carrying out medically prescribed measures, regulating discomforting effects of medical care measures, modifying self-concept in accepting oneself despite health issues, and learning to live with effects of pathologic conditions and medical treatments (Halmo et

al., 2013). Results indicated that participants had the greatest self-care deficits in physical activity, sleep and fatigue, and that the greatest self-care agency was shown in the area of managing problems with physical activities and sleep (Halmo et al., 2013). At the conclusion of this study, researchers felt that incorporating Orem's self-care requisites with the effects of heart failure created an effective assessment tool to recognize self-care needs and manage the problems associated with the illness (Halmo et al., 2013).

Britz and Dunn (2010) also conducted a research study on heart failure patients and determined the quality of life for patients based on self-care deficits present. Using Orem's SCDNT theory as the framework to this study, researchers conducted a cross-sectional, descriptive study to administer 22-item questionnaires on 30 participants recently discharged from the hospital (Britz & Dunn, 2010). Patients were surveyed on self-care maintenance (daily weights, diet, and medication compliance), self-care management (recognizing worsening symptoms), and self-care confidence (confidence in home-care instructions and identifying changes in health) (Britz & Dunn, 2010). The most significant and unexpected results of the study demonstrated a strong correlation between self-care confidence and physical, emotional, and total quality of life for heart failure patients. At the conclusion of the investigation, researchers emphasized the importance of using Orem's SCDNT during discharge education since a higher quality of life after discharge was found in patients who are more confident in the self-care of an illness (Britz & Dunn, 2010).

Strengths & Limitations of Literature

Throughout the review of nursing literature, there was an abundance of research studies conducted toward the benefits of patient education, regardless of the health care setting. The majority of nursing studies highlighted the positive impact that education has on patient care and health outcomes. The conclusion of many studies supported the purpose of this research study and emphasized the push for more research to be conducted toward nursing education for patients. During the review of current nursing research for patient education, many studies were found to have been conducted on patients with heart issues. Although many studies were conducted on chronic cardiovascular issues, overall research supports the purpose of this study and the importance of education for those treated for a cardiac-related diagnosis. Throughout the nursing literature, Orem's SCDNT was frequently utilized to demonstrate applicability toward discharge education practices and the need for research-based improvements in patient education. As many studies emphasized the importance of promoting self-care for patients after hospitalization, nursing literature underlined the purpose and importance of this research study.

During the research review, there was a limited amount of research studies addressing discharge education for patients leaving the ED. Many studies tend to focus on discharge teaching for patients leaving the inpatient setting or from a specialized nursing unit. Very little data was found toward patients treated and being discharged for non-ACS chest pain leaving the ED. The majority of research studies found were focused on chronic cardiac issues, such as congestive heart failure, or on those who have experienced a MI. Due to the acuity of those that are diagnosed with ACS chest pain, a

greater emphasis within research was found on post-MI, post-coronary artery bypass graft (CABG), or post-percutaneous coronary intervention (PCI) patients at discharge. Current nursing literature also illustrates that minimal studies have been conducted on nursing perceptions toward discharge teaching or health promotion activities for non-ACS chest pain patients. Many research studies discovered during the literature review often attempted to observe current, everyday nursing practices or the perceptions of patients toward their illness and the nursing care they received. As many weaknesses exist in current nursing literature, this research study contributes to nursing knowledge by enabling a greater understanding of ED discharge education for non-ACS chest pain patients.

Summary

Collectively, current nursing literature toward discharge education and patient outcomes reiterates a synonymous theme that high-quality education contributes to an optimal level of health and a higher quality of life after discharge. Research discovered that Orem's SCDNT is commonly used within nursing education and is applicable toward this research investigation. Nursing research fails to recognize non-ACS chest pain patients or discharge education in patients leaving the ED setting. Supported by nursing research and theory, the investigation of health promotion and discharge education for non-ACS chest pain patients helps to bridge the gap in current nursing literature.

CHAPTER III

Methodology

A sequence of steps was utilized to address both the frequency of discharge teaching on cardiovascular health topics and the attitudes of health promotion and education for non-Acute Coronary Syndrome (ACS) chest pain patients. The methodology in which emergency department (ED) nurses were surveyed and utilized throughout the study will be described throughout this chapter.

The aim of this research study was to understand how nurses are encouraging well-being in non-ACS chest pain patients at discharge. The study's goal was to learn how often nurses discussed important cardiovascular topics to non-ACS chest pain patients and understand the nursing attitudes toward these health promotion activities during discharge education. The purpose of this research study was fulfilled by an extensive process guided by current nursing literature, theoretical concepts, and the application of the Preventive Medicine Attitudes and Activities Questionnaire (PMAAQ) tool.

Implementation

Once approval was received by the designated research study facility, the process of recruiting participants began. A recruitment flyer was posted in the ED break room and was sent to nurses via e-mail to their work e-mail addresses. The flyer indicated that ED nurses were needed for the questionnaire and gave a hyperlink to complete the survey online through SurveyMonkey, Inc., an online survey development company.

An online participant information leaflet page was created and posted on the first page of the website once participants clicked on the survey link. This page included the

purpose of the research study, risks and benefits involved, costs involved, amount of time needed to complete the questionnaire, security measures that are in place, and contact information that participants may need. The participant information leaflet page served as the unwritten consent to the study. If participants chose to give their consent, they continued on to finish the questionnaire. If participants refused to participate, they were allowed to exit the survey at any time with no penalty.

As participants continued throughout the online survey, the PMAAQ was implemented to ask five demographic questions, four questions on the activities of cardiovascular education, and four questions on the attitudes toward health promotion. The PMAAQ was focused on discharge education for patients treated for non-ACS chest pain. Participants were allotted two weeks to complete the survey and the questions that participants had throughout the survey period were addressed via e-mail communication. All items were required to be answered throughout the questionnaire prior to submitting it for completion. If a participant failed to answer a question, an alert screen prompted participants to answer the question.

Setting

This research study was conducted on ED nurses currently working in a small hospital in a southeastern state in the United States. This hospital is Joint Commission Accredited and has 102 licensed beds. The ED contains 15 beds that are in operation 24 hours per day and is accredited by the Society of Cardiovascular Patient Care. One physician is on duty at all times and one physician assistant or nurse practitioner works between the hours of 12 p.m. to 12 a.m. An average of 85 patients is seen daily within this ED.

Since the questionnaire was offered only online, participants were not restricted to a particular location as to where they were allowed to complete the survey. Participants simply had to find a computer with internet access and completed the survey either at work or at home.

Sample

Using convenience sampling, a total of 30 nurses participated in the study. Participants were required to be an ED nurse presently employed at the facility in a full time, per diem, PRN, cross-trained, or float pool position. A total of 45 nurses were eligible to participate in the study.

Demographic questions listed within the PMAAQ helped to provide additional information toward the overall population of those participating in the survey. The demographic questions utilized in the PMAAQ helped to recognize the variety of educational backgrounds, years of nursing experience, hours worked per week, employment status, and gender. There was no exclusion of participants based on this demographic information.

Design

A cross-sectional, descriptive study design was utilized to quantitatively investigate current discharge education practices by nurses in the ED. This type of research design was carried out by using the PMAAQ tool and facilitated a greater understanding of current health promotion activities and the attitudes ED nurses had in providing discharge education for non-ACS chest pain patients.

The nature of this research study helped to promote anonymity while accommodating participants' busy schedules. During a two week period, participants

were given the option to complete the quick, five minute survey at their own convenience. The primary method of communicating with participants was through e-mail since it provided an expedient way for participants to have their questions answered during the survey period.

The implementation of the PMAAQ during this research study preserved anonymity and protect confidentiality. To maintain anonymity, a consent page was utilized to obtain consent from participants without obtaining signatures or participants' names. Demographic questions were developed without the use of identifiers so that survey results could not be linked with individual participants. Each question throughout the survey utilized a Likert scale to measure participants' responses. Dependent on the question asked, responses were based on seven-point scale, a four-point scale, or a five-point scale. The utilization of a scaled-response questionnaire helped to simplify the analysis of data provided by participants.

Participants of this research study were exposed to indirect benefits with no risks involved. As depicted in the participant information leaflet, involvement in this questionnaire did not affect participants' employment status nor the relationship with their employer. The benefit of this study was provided by the recognition of weaknesses in discharge education for non-ACS chest pain patients that may help to contribute toward improvements in nursing teaching practices at bedside.

Protection of Human Subjects

Administrative permission was received by the directors of the ED, the Chief Nursing Executive, and the director of the Center for Lifelong Learning at the facility designated for this research study. Approval from the Institutional Review Boards of the healthcare facility and the university was also obtained prior to the start of this study. Permission was granted on the basis of performing an anonymous survey with little to no risks involved with participants.

Participants involved in this research study were invited to voluntarily participate in the anonymous PMAAQ with no risks involved. Because the results provided by participants were anonymous and were obtained without the use of identifying information, no risks were posed to the participants of this research study. There were no costs to those that participated and no dangers toward employment status or reputation.

Utilizing SurveyMonkey, Inc. for the implementation of the PMAAQ tool provided additional protection of participants throughout this research study. SurveyMonkey, Inc. has been awarded TRUSTe's Privacy Seal and complies with the US-EU and US-Swiss Safe Harbor Frameworks signifying optimum privacy and security of all survey data. Secure Sockets Layer (SSL) encryption features were enabled and the collection of internet protocol addresses was disabled to maintain privacy and confidentiality of all data. All results from this survey were kept confidential and were password protected.

Instruments

The tool used for this study was the Preventive Medicine Attitudes and Activities Questionnaire (PMAAQ). Dr. Yeazel and an expert panel of preventive medicine

physicians from the University of Minnesota created and published this survey instrument to focus on physicians' perceived effectiveness in promoting patient behavior change, importance on patient counseling, and self-reported cardiovascular disease prevention activities (Yeazel, Bremer, & Center, 2006).

Validity and reliability of this tool has been tested in four ways: content validity through an expert panel, calculation of the coefficient of internal consistency (Cronbach's $\alpha = 0.77$ to 0.92), demonstration of divergent validity, and external validation using a pre-existent chart review database (Yeazel et al., 2006).

Permission was received from Dr. Yeazel to utilize and adapt the PMAAQ for nurses in the ED setting. The original demographic questions on the PMAAQ were modified to survey nurses' educational levels, years of experience, hours worked per week, employment statuses, and gender. Content within the questionnaire was divided between two sections. The activities section interrogates participants on the frequency of discharge education provided to non-ACS chest pain patients in regards to weight management, smoking cessation, blood pressure control, stress management, exercise, and healthy dietary choices. The attitudes section questions nurses' attitudes based on their perceived effectiveness, importance, comfort level, and barriers toward health promotion and discharge education for those patients treated for non-ACS chest pain.

Data Collection

The process of data collection was conducted exclusively by the primary investigator online through SurveyMonkey, Inc. Responses were collected electronically as participants completed the questionnaire but were not analyzed until the two week period was over and 30 participants were obtained. Since all questions were required to

be answered by each participant, results submitted for data collection were complete and ready for analysis. As responses were collected, results were automatically tabulated based on the results of each individual question and each individual questionnaire submitted.

Data Analysis

Until all descriptive statistics were collected from each participant, questionnaire results remained online at SurveyMonkey, Inc. until ready to be analyzed. The analysis of results was performed using the International Business Machines' (IBM) Statistical Package for the Social Sciences (SPSS) computer program (SPSS Statistics, 2014). The primary investigator performed the statistical analysis of the quantitative data to ensure that the research questions were answered.

The first five survey questions yielded general demographic data of the sample population. Using descriptive statistics, a frequency table was created to depict both the number of participants, or frequency, for each variable and the percentage of the particular variable within the sample population. Education level, years of experience, hours worked per week, employment status, and gender were variables addressed in the first five survey questions.

Survey items six through nine addressed specific health promotion activities including cardiovascular health issues, weight management, smoking cessation, and blood pressure control. Responses of each of these survey items were scored using the following seven-point Likert scale: *never* (0%), *rarely* (1-20%), *sometimes* (21-40%), *half the time* (41-60%), *often* (61-80%), *usually* (81-99%), and *always* (100%).

Frequency tables for each of the four health promotion activities addressed were created using the results from all participants.

Survey items 10 through 13 addressed attitudes of ED nurses toward promoting and educating about cardiovascular health topics including perceived effectiveness, importance, comfort level, and barriers. Perceived effectiveness toward changing the behavior of non-ACS chest pain patients was measured based on the following four-point Likert scale: *very effective* (1), *moderately effective* (2), *somewhat effective* (3), and *minimally effective* (4). Nurses' perceived importance toward the counseling and education of non-ACS chest pain patients was measured based on another four-point Likert scale, indicated by the following: *very important* (1), *moderately important* (2), *somewhat important* (3), and *not very important* (4). Perceived comfort levels based on specific statements toward education for non-ACS chest pain patients was measured based on the following five-point Likert scale: *strongly agree* (1), *somewhat agree* (2), *neither agree nor disagree* (3), *somewhat disagree* (4), and *strongly disagree* (5). Perceived barriers to effective health promotion and education for non-ACS chest pain patients was measured based on the following five-point Likert scale: *not important* (1), *minimally important* (2), *somewhat important* (3), *moderately important* (4), and *very important* (5). Frequency tables for each of the four attitudes addressed were created using the results from participants.

Summary

The purpose of this research study was to understand how nurses are encouraging health and well-being at discharge for those patients treated for non-ACS chest pain. Following a cross-sectional, descriptive study design facilitated a quantitative

investigation using the PMAAQ tool in order to observe current health promotion and educational activities provided by ED nurses. Through a series of methodical steps taken, this research study fulfilled its purpose by recognizing the amount of time spent educating on important cardiovascular topics and the perceptions that nurses have toward health promotion and education at discharge for non-ACS chest pain patients.

CHAPTER IV

Results

The collection of results from the survey generated statistical data so that the frequency of discharge teaching and the attitudes of health promotion and education for non-Acute Coronary Syndrome (ACS) chest pain patients could be analyzed. Outcomes of the Preventive Medicine Attitudes and Activities Questionnaire (PMAAQ) illustrate the responses given by emergency department (ED) nurses and will be presented throughout this chapter.

The objective of the study was to determine how ED nurses are effectively encouraging overall well-being in non-ACS chest pain patients through health promotion and education at discharge. The study aimed to learn how often nurses discuss pertinent cardiovascular topics and the attitudes of nurses toward these health promotion activities during discharge teaching. The PMAAQ tool facilitated a cross-sectional, descriptive study to observe current health promotion and educational activities provided by ED nurses. As depicted throughout this chapter, participants' responses were analyzed to determine the achievement of the study's purpose set forth by the research questions.

Sample Characteristics

The sample of participants consisted of nurses from a variety of educational backgrounds. As Table 1 indicates, the majority of nurses involved in this study had their Associate of Science in Nursing (ASN) degree. The minority of nurses had diploma in registered nursing or Bachelor of Science in Nursing (BSN) degrees. No nurses had their Master of Science (MSN) degree.

Work experience varied throughout those that participated in the study. Only one participating nurse had an experience level of less than one year while the majority of nurses had one to four years or 5 to 10 years of experience. Table 1 presents a more detailed description of the work experience for participating nurses.

The sample of participants works a variety of hours within the emergency department at the designated hospital. A large majority of the participants worked 31 to 40 hours per week. See Table 1 for an overview of hours worked per week by the nurses involved in this study.

The study did not exclude participants based on employment status. The majority of ED nurses were employed full-time as registered nurses. Very few nurses were employed as a PRN, cross-trained, float pool, or per diem nurse.

Both male and female nurses participated in this study. As Table 1 indicates, female nurses heavily outnumbered male nurses.

Table 1

Frequencies for Demographic Data

Variable	Frequency	Percentage
Education Level		
Diploma in Registered Nursing	1	3.3%
Associate of Science in Nursing (ASN)	18	60.0%
Bachelor of Science in Nursing (BSN)	11	36.7%
Master of Science in Nursing (MSN)	0	0.0%
Years of Experience		
0-1 Year	1	3.3%
1-4 Years	9	30.0%
5-10 Years	9	30.0%
11-15 Years	4	13.3%
16-20 Years	4	13.3%
21-30 Years	2	6.7%
>30 Years	1	3.3%
Hours Worked Per Week		
0-5 Hours	1	3.3%
6-10 Hours	1	3.3%
11-20 Hours	2	6.7%
31-40 Hours	22	73.3%
>40 Hours	4	13.3%
Employment Status		
Full-Time RN	25	83.3%
As Needed or "PRN" RN	1	3.3%
Per Diem RN	3	10.0%
Cross-Trained RN	1	3.3%
Float Pool RN	0	0.0%
Gender		
Male	4	13.3%
Female	26	86.7%

Major Findings

Throughout the survey, there were no nonresponses, withdrawals, or losses. All surveys submitted were complete. The analysis of data was conducted by the International Business Machines' (IBM) Statistical Package for the Social Sciences (SPSS) computer program. Statistical information was used to fulfill the research study's purpose and proposed research questions.

Activities

Based on the health promotion activities portion of the PMAAQ, the frequency of cardiovascular health education provided to non-ACS chest pain patients at discharge was addressed. The amount of education provided on overall cardiovascular health issues, weight management, smoking cessation, and blood pressure control were covered in survey items six through nine. Using the same scale of measurement for each of these questions, four individual tables were generated based on the responses received.

Overall cardiovascular health issues. As depicted in Table 2, this survey item entailed a variety of cardiovascular health topics so that the frequency of education provided by participants could be addressed.

For the topic of exercise, a total of 7 nurses *never*, 9 nurses *rarely*, 5 nurses *sometimes*, 3 nurses *half the time*, 2 nurses *often*, 3 nurses *usually*, and 1 nurse *always* educate on this health issue.

In regards to the amount of education provided on decreasing dietary fat consumption, 6 nurses *never*, 10 nurses *rarely*, 5 nurses *sometimes*, 3 nurses *half the time*, 3 nurses *often*, and 3 nurses *usually* educate on this health issue. No participants stated they *always* educate on decreasing fat in the patient's diet.

The subject of smoking cessation indicated that 0 nurses *never*, 5 nurses *rarely*, 2 nurses *sometimes*, 2 nurses *half the time*, 8 nurses *often*, 9 nurses *usually*, and 4 nurses *always* educate on this cardiovascular topic.

On the subject of weight management, 2 nurses *never*, 14 nurses *rarely*, 1 nurse *sometimes*, 4 nurses *half the time*, 4 nurses *often*, 4 nurses *usually*, and 1 nurse *always* educate on this area of cardiovascular health.

In regards to the amount of education provided on stress management, 2 nurses *never*, 5 nurses *rarely*, 4 nurses *sometimes*, 4 nurses *half the time*, 9 nurses *often*, 5 nurses *usually*, and 1 nurse *always* educate on this health issue.

The subject of increasing fruit and vegetable consumption found that 7 nurses *never*, 11 nurses *rarely*, 4 nurses *sometimes*, 3 nurses *half the time*, 2 nurses *often*, and 3 nurses *usually* educate on this cardiovascular topic. No nurses stated they *always* provide patient education on the consumption of more fruits and vegetables.

Table 2

Frequencies for Education Provided on Overall Cardiovascular Health Issues

	Never (0%)	Rarely (1-21%)	Sometimes (21-40%)	Half the Time (41-60%)	Often (61-80%)	Usually (81-99%)	Always (100%)
Exercise	7 (23.33%)	9 (6.67%)	5 (16.67%)	3 (10.00%)	2 (6.67%)	3 (10.00%)	1 (3.33%)
Decrease Dietary Fat Consumption	6 (23.33%)	10 (13.33%)	5 (16.67%)	3 (10.00%)	3 (10.00%)	3 (10.00%)	0 (0.00%)
Smoking Cessation	0 (16.67%)	5 (16.67%)	2 (6.67%)	2 (6.67%)	8 (10.00%)	9 (30.00%)	4 (6.67%)
Weight Reduction	2 (6.67%)	14 (46.67%)	1 (3.33%)	4 (13.33%)	4 (13.33%)	4 (13.33%)	1 (3.33%)
Stress Management	2 (6.67%)	5 (16.67%)	4 (13.33%)	4 (13.33%)	9 (30.00%)	5 16.67%	1 (3.33%)
Increase Consumption of Fruits & Vegetables	7 (23.33%)	11 (36.67%)	4 (13.33%)	3 (10.00%)	2 (6.67%)	3 (10.00%)	0 (0.00%)

Weight management. The health issue of weight management was also addressed in the activities portion of the PMAAQ. Responses, as depicted in Table 3, addressed the frequency of education provided by nurses toward this cardiovascular health topic.

In regards to the amount of education provided on exercising regularly, 5 nurses *never*, 10 nurses *rarely*, 5 nurses *sometimes*, 3 nurses *half the time*, 2 nurses *often*, 3 nurses *usually*, and 2 nurses *always* educate on this health issue.

For the topic of decreasing caloric intake, a total of 7 nurses *never*, 10 nurses *rarely*, 4 nurses *sometimes*, 2 nurses *half the time*, 2 nurses *often*, 4 nurses *usually*, and 1 nurse *always* educate on this health issue.

Given the matter of setting weight loss goals, indicated that 9 nurses *never*, 6 nurses *rarely*, 8 nurses *sometimes*, 2 nurses *half the time*, 2 nurses *often*, 2 nurses *usually*, and 1 nurse *always* educate on this cardiovascular topic.

Based on the subject of decreasing dietary fat consumption, 6 nurses *never*, 11 nurses *rarely*, 3 nurse *sometimes*, 3 nurses *half the time*, 2 nurses *often*, and 5 nurses *usually* educate on this area of cardiovascular health. No nurses stated they *always* educate patients on lowering the intake of fat in their diets.

In regards to ensuring patients get a plasma glucose test by their primary care physician to test for diabetes, 17 nurses *never*, 5 nurses *rarely*, 3 nurses *sometimes*, 0 nurses *half the time*, 4 nurses *often*, and 1 nurse *usually* educate on this health issue. No participants stated they *always* provide education on receiving follow-up tests to check for diabetes.

The subject of setting goals for exercise frequency and duration indicated that 10 nurses *never*, 6 nurses *rarely*, 8 nurses *sometimes*, 1 nurse *half the time*, 3 nurses *often*, and 2 nurses *usually* educate on this cardiovascular topic. No nurses reported that they *always* educate on this health matter.

Given the subject of performing specific exercises, 16 nurses *never*, 1 nurse *rarely*, 8 nurses *sometimes*, 2 nurses *half the time*, 1 nurse *often*, and 2 nurses *usually* educate on this area of cardiovascular health. No participants stated they *always* educate on this health issue.

Table 3

Frequencies for Education Provided on Weight Management

	Never (0%)	Rarely (1-21%)	Sometimes (21-40%)	Half the Time (41-60%)	Often (61- 80%)	Usually (81-99%)	Always (100%)
Exercise Regularly	5 (16.67%)	10 (33.33%)	5 (16.67%)	3 (10.00%)	2 (6.67%)	3 (10.00%)	2 (6.67%)
Decrease Caloric Intake	7 (23.33%)	10 (33.33%)	4 (13.33%)	2 (6.67%)	2 (6.67%)	4 (13.33%)	1 (3.33%)
Set a Goal for Weight Loss	9 (30.00%)	6 (20.00%)	8 (26.67%)	2 (6.67%)	2 (6.67%)	2 (6.67%)	1 (3.33%)
Decrease Dietary Fat Consumption	6 (20.00%)	11 (36.67%)	3 (10.00%)	3 (10.00%)	2 (6.67%)	5 (16.67%)	0 (0.00%)
Get a Plasma Glucose Test to Test for Diabetes	17 (56.67%)	5 (16.67%)	3 (10.00%)	0 (0.00%)	4 (13.33%)	1 (3.33%)	0 (0.00%)
Set Goals on Exercise Frequency & Duration	10 (33.33%)	6 (20.00%)	8 (26.67%)	1 (3.33%)	3 (10.00%)	2 (6.67%)	0 (0.00%)
Perform Specific Exercises	16 (53.33%)	1 (3.33%)	8 (26.67%)	2 (6.67%)	1 (3.33%)	2 (6.67%)	0 (0.00%)

Smoking cessation. As depicted in Table 4, participants' responses are shown based on the frequency of education provided on smoking cessation.

In regards to advising the patient to quit smoking, a total of 3 nurses *never*, 0 nurses *rarely*, 5 nurses *sometimes*, 2 nurses *half the time*, 4 nurses *often*, 7 nurses *usually*, and 9 nurses *always* educate on this health issue.

In the advisement of setting a specific "quit date", 12 nurses *never*, 6 nurses *rarely*, 2 nurses *sometimes*, 1 nurse *half the time*, 2 nurses *often*, 4 nurses *usually*, and 3 nurses *always* educate on this health issue.

The subject of providing information on a smoking cessation program indicated that 13 nurses *never*, 3 nurses *rarely*, 5 nurses *sometimes*, 2 nurses *half the time*, 5 nurses *often*, 1 nurse *usually*, and 1 nurse *always* educate on this issue.

In regards to educating on withdrawal symptoms, 11 nurses *never*, 2 nurses *rarely*, 6 nurses *sometimes*, 1 nurse *half the time*, 5 nurses *often*, 3 nurses *usually*, and 2 nurses *always* educate on this area of cardiovascular health.

Given the subject of smoking cessation medications, results indicated that 4 nurses *never*, 6 nurses *rarely*, 4 nurses *sometimes*, 2 nurses *half the time*, 4 nurses *often*, 6 nurses *usually*, and 4 nurses *always* educate on this area of cardiovascular wellness.

On the topic of providing self-help materials, 14 nurses *never*, 2 nurses *rarely*, 2 nurses *sometimes*, 0 nurses *half the time*, 5 nurses *often*, 5 nurses *usually*, and 2 nurses *always* educate on this cardiovascular topic.

Table 4

Frequencies for Education Provided on Smoking Cessation

	Never (0%)	Rarely (1-21%)	Sometimes (21-40%)	Half the Time (41-60%)	Often (61-80%)	Usually (81-99%)	Always (100%)
Advise the Patient to Quit Smoking	3 (10.00%)	0 (0.00%)	5 (16.67%)	2 (6.67%)	4 (13.33%)	7 (23.33%)	9 (30.00%)
Advise Setting a Specific "Quit Date"	12 (40.00%)	6 (20.00%)	2 (6.67%)	1 (3.33%)	2 (6.67%)	4 (13.33%)	3 (10.00%)
Provide Information to a Smoking Cessation Program	13 (43.33%)	3 (10.00%)	5 (16.67%)	2 (6.67%)	5 (16.67%)	1 (3.33%)	1 (3.33%)
Educate the Patient on Withdrawal Symptoms	11 (36.67%)	2 (6.67%)	6 (20.00%)	1 (3.33%)	5 (16.67%)	3 (10.00%)	2 (6.67%)
Educate the Patient on Medications such the Nicotine Patch or Gum	4 (13.33%)	6 (20.00%)	4 (13.33%)	2 (6.67%)	4 (13.33%)	6 (20.00%)	4 (13.33%)
Provide Self-Help Materials	14 (46.67%)	2 (6.67%)	2 (6.67%)	0 (0.00%)	5 (16.67%)	5 (16.67%)	2 (6.67%)

Blood pressure control. The frequency of education provided by ED nurses on blood pressure management is illustrated by the responses given in Table 5.

The review of health risks associated with hypertension is a topic that 1 nurse *never*, 2 nurses *rarely*, 3 nurses *sometimes*, 2 nurses *half the time*, 6 nurses *often*, 11 nurses *usually*, and 5 nurses *always* educate patients on.

In regards to advising weight loss for overweight patients, 7 nurses *never*, 4 nurses *rarely*, 3 nurses *sometimes*, 4 nurses *half the time*, 4 nurses *often*, 7 nurses *usually*, and 1 nurse *always* educate on this health issue.

Given the subject of dietary salt reduction, 5 nurses *never*, 4 nurses *rarely*, 2 nurses *sometimes*, 5 nurses *half the time*, 3 nurses *often*, 9 nurses *usually*, and 2 nurses *always* educate on this cardiovascular topic.

In regards to medication adherence, 1 nurse *never*, 1 nurse *rarely*, 2 nurses *sometimes*, 0 nurses *half the time*, 5 nurses *often*, 10 nurses *usually*, and 11 nurses *always* educate on this subject of cardiovascular health.

Table 5

Frequencies for Education Provided on Blood Pressure Control

	Never (0%)	Rarely (1-21%)	Sometimes (21-40%)	Half the Time (41-60%)	Often (61-80%)	Usually (81-99%)	Always (100%)
Review Health Risks of Hypertension	1 (3.33%)	2 (6.67%)	3 (10.00%)	2 (6.67%)	6 (20.00%)	11 (36.67%)	5 (16.67%)
Advise Weight Loss for Those Who Were Overweight	7 (23.33%)	4 (13.33%)	3 (10.00%)	4 (13.33%)	4 (13.33%)	7 (23.33%)	1 (3.33%)
Advise Salt Reduction	5 (16.67%)	4 (13.33%)	2 (6.67%)	5 (16.67%)	3 (10.00%)	9 (30.00%)	2 (6.67%)
Talk About the Importance of Taking Medication Regularly	1 (3.33%)	1 (3.33%)	2 (6.67%)	0 (0.00%)	5 (16.67%)	10 (33.33%)	11 (36.67%)

Attitude

The attitudes section of the PMAAQ survey addressed nurses' perceived effectiveness, importance, comfort, and barriers toward discharge education and health promotion for non-ACS chest pain patients. Based on survey items 10 through 13, four individual tables with specific scales of measurement demonstrated the responses given by participants.

Perceived effectiveness. As demonstrated in Table 6, responses indicate the nursing perceptions toward the effectiveness of changing the behavior of non-ACS chest pain patients in regards to specific cardiovascular topics.

Based on the education of exercise, 0 nurses felt *very effective*, 4 nurses felt *moderately effective*, 9 nurses felt *somewhat effective*, and 17 nurses felt *minimally effective* in teaching this topic to non-ACS chest pain patients at discharge.

In regards to a healthy diet, 2 nurses felt as *very effective*, 3 nurses felt *moderately effective*, 11 nurses felt *somewhat effective*, and 14 nurses felt *minimally effective* in the education they provide patients.

Given the topic of smoking cessation, 1 nurse felt *very effective*, 9 nurses felt *moderately effective*, 7 nurses felt *somewhat effective*, and 13 nurses felt *minimally effective* toward educating this health subject to patients.

Based on the issue of weight reduction, 1 nurse felt *very effective*, 3 nurses felt *moderately effective*, 9 nurses felt *somewhat effective*, and 17 nurses felt *minimally effective* in educating patients on this topic.

In regards to stress management, 1 nurse felt *very effective*, 6 nurses felt *moderately effective*, 12 nurses felt *somewhat effective*, and 11 nurses felt *minimally effective* in the education given to patients.

Table 6

Frequencies for Perceived Effectiveness

	1. Very Effective	2. Moderately Effective	3. Somewhat Effective	4. Minimally Effective
Exercise	0 (10.00%)	4 (13.33%)	9 (30.00%)	17 (56.67%)
Healthy Diet	2 (6.67%)	3 (10.00%)	11 (36.67%)	14 (46.67%)
Smoking Cessation	1 (3.33%)	9 (30.00%)	7 (23.33%)	13 (43.33%)
Weight Reduction	1 (3.3%)	3 (10.00%)	9 (30.00%)	17 (56.67%)
Stress Management	1 (3.33%)	6 (20.00%)	12 (40.00%)	11 (36.67%)

Perceived importance. Nurses' perceived importance toward the counseling and education of non-ACS chest pain patients is demonstrated in Table 7.

In regards to cholesterol levels, 18 nurses considered this topic to *very important*, 7 nurses felt it is *moderately important*, 3 nurses felt that it is *somewhat important*, and 2 nurses felt that it is *not very important* in the education for non-ACS chest pain patients.

On the subject of blood pressure, 27 nurses felt that it was *very important*, 2 nurses felt that it is *moderately important*, 1 nurse felt that it is *somewhat important*, and no nurses felt that it is *not very important* in the education and health promotion for patients treated for non-ACS chest pain.

Based on the education of exercise, 21 ED nurses felt that it was *very important*, 7 nurses felt it is *moderately important*, 1 nurse felt that it is *somewhat important*, and 1 nurse felt that it is *not very important* to teach.

Given the subject of a healthy diet for non-ACS chest pain patients, 20 nurses felt that it is *very important*, 8 nurses felt that it is *moderately important*, 1 nurse felt that it is *somewhat important*, and 1 nurse felt that it is *not very important* in the education for these patients.

In regards to smoking cessation, 26 nurses felt that this topic is *very important*, 3 nurses felt that it is *moderately important*, and 1 nurse felt that it is *somewhat important* in the education of patients being discharged with non-ACS chest pain. No nurse felt that smoking cessation was *not very important* for these patients.

Given the subject of reducing weight, 18 nurses considered this subject to be *very important*, 8 nurses considered it to be *moderately important*, 3 nurses considered it to be *somewhat important*, and 1 nurse considered it to be *not very important* for non-ACS chest pain patients.

Based on the issue of stress and relaxation, 20 nurses felt that it is *very important*, 7 nurses felt that it is *moderately important*, 2 nurses felt that it is *somewhat important*, and 1 nurse felt that it is *not very important* in the education for non-ACS chest pain patients at discharge.

Table 7

Frequencies for Perceived Importance

	1. Very Important	2. Moderately Important	3. Somewhat Important	4. Not Very Important
Cholesterol Levels	18 (60.00%)	7 (23.33%)	3 (10.00%)	2 (6.67%)
Blood Pressure	27 (90.00%)	2 (6.67%)	1 (3.33%)	0 (0.00%)
Exercise	21 (70.00%)	7 (23.33%)	1 (3.33%)	1 (3.33%)
Healthy Diet	20 (66.67%)	8 (26.67%)	1 (3.33%)	1 (3.33%)
Smoking Cessation	26 (86.67%)	3 (10.00%)	1 (3.33%)	0 (0.00%)
Weight Reduction	18 (60.00%)	8 (26.67%)	3 (10.00%)	1 (3.33%)
Stress & Relaxation	20 (66.67%)	7 (23.33%)	2 (6.67%)	1 (3.33%)

Perceived comfort. The level of agreement that participants had toward specific statements about non-ACS chest pain patients is indicated in Table 8.

The first statement suggests that smoking cessation counseling is an effective use of time for ED nurses. In response to this question, 9 nurses *strongly agree*, 13 nurses *somewhat agree*, 5 nurses *neither agree nor disagree*, 2 nurses *somewhat disagree*, and 1 nurse *strongly disagree*.

The second statement proclaims that, for many non-ACS chest pain patients, health education does little to promote adherence to a healthy lifestyle. In regards to this statement, 3 nurses *strongly agree*, 11 nurses *somewhat agree*, 7 nurses *neither agree nor disagree*, 5 nurses *somewhat disagree*, and 4 nurses *strongly disagree*.

The third statement states that ED nurses are less effective than professional counselors or physicians in getting patients to quit smoking. In response to this statement, 4 nurses *strongly agree*, 8 nurses *somewhat agree*, 7 nurses *neither agree nor disagree*, 8 nurses *somewhat disagree*, and 3 nurses *strongly disagree*.

The fourth statement suggests that patients with no further chest pain symptoms rarely change their behavior after discharge education. A total of 6 nurses *strongly agree*, 15 nurses *somewhat agree*, 6 nurses *neither agree nor disagree*, and 3 nurses *somewhat disagree*. No nurses stated they *strongly disagree* with this statement.

The final statement states that most non-ACS chest pain patients change their lifestyles if ED nurses educate and advise them to do so. In regards to this statement, 3 nurses *strongly agree*, 3 nurses *somewhat agree*, 9 nurses *neither agree not disagree*, 13 nurses *somewhat disagree*, and 3 nurses *strongly disagree*.

Table 8

Frequencies for Perceived Comfort

	1. Strongly Agree	2. Somewhat Agree	3. Neither Agree nor Disagree	4. Somewhat Disagree	5. Strongly Disagree
Smoking cessation counseling is an effective use of my time as a nurse.	9 (30.00%)	13 (43.33%)	5 (16.67%)	2 (6.67%)	1 (3.33%)
For most patients, health education does little to promote their adherence to a healthy lifestyle.	3 (10.00%)	11 (36.67%)	7 (23.33%)	5 (16.67%)	4 (13.33%)
I am less effective than professional counselors or physicians in getting patients to quit smoking.	4 (13.33%)	8 (26.67%)	7 (23.33%)	8 (26.67%)	3 (10.00%)
Patients with no further chest pain symptoms rarely change their behavior after discharge education.	6 (20.00%)	15 (50.00%)	6 (20.00%)	3 (10.00%)	0 (0.00%)
Most patients try to change their lifestyles if I education & advise them to do so.	3 (10.00%)	3 (10.00%)	9 (30.00%)	13 (43.33%)	2 (6.67%)

Perceived barriers. The perceived importance of barriers toward effective health promotion and education for non-ACS chest pain patients is depicted in Table 9.

The first barrier suggested was the lack of time toward providing adequate education for non-ACS chest pain patients at discharge. Although no nurses felt that this barrier is *not important*, 2 nurses felt that it is *minimally important*, 3 nurses felt that it is *somewhat important*, 12 nurses felt that it is *moderately important*, and 13 nurses felt that it is a *very important* barrier to discharge education and health promotion for non-ACS chest pain patients.

The second barrier listed was the lack of availability of health educators within the ED setting. Although no nurses felt that this barrier is *not important*, 1 nurse felt that it is *minimally important*, 8 nurses felt that it is *somewhat important*, 14 nurses felt that it is *moderately important*, and 7 nurses felt that it is *very important* toward discharge education for those treated for non-ACS chest pain.

The third barrier was the lack of ED nursing interest toward providing prevention and educational information for non-ACS chest pain patients. Although no nurses felt that this barrier is *not important*, 6 nurses felt that it is *minimally important*, 13 nurses felt that it is *somewhat important*, 6 nurses felt that it is *moderately important*, and 5 nurses felt that it is *very important*.

The fourth barrier suggested was the lack of patient interest in prevention and educational services for non-ACS chest pain. A total of 0 nurses felt that this barrier is *not important*, 1 nurse felt that it is *minimally important*, 6 nurses felt that it is *somewhat important*, 7 nurses felt that it is *moderately important*, and 16 nurses felt that it is a *very important* barrier toward providing education and health promotion to these patients.

An uncertainty of educational information to provide non-ACS chest pain patients was the fifth barrier listed. Although 1 nurse felt that this barrier is *not important*, 5 nurses felt that it is *minimally important*, 8 nurses felt that it is *somewhat important*, 7 nurses felt that it is *moderately important*, and 9 nurses felt that it is *very important* to the education of these patients at discharge.

The lack of proper education materials to give non-ACS chest pain patients was the next barrier stated. Although 0 nurses felt that this barrier is *not important*, 1 nurse

felt that it is *minimally important*, 8 nurses felt that it is *somewhat important*, 12 nurses felt that it is *moderately important*, and 9 nurses felt that it is *very important*.

The seventh barrier listed was communication difficulties with non-ACS chest pain patients. Although 0 nurses felt that this topic is *not an important* barrier to education, 4 nurses felt that it is *minimally important*, 9 nurses felt that it is *somewhat important*, 7 nurses felt that it is *moderately important*, and 10 nurses felt that it is *very important*.

The next barrier suggested was the cultural differences between nurses and patients. A total of 2 nurses felt that this barrier is *not important*, 7 nurses felt that it is *minimally important*, 6 nurses felt that it is *somewhat important*, 10 nurses felt that it is *moderately important*, and 5 nurses felt that it is *very important* in the education for non-ACS chest pain patients.

The final barrier listed within the survey question was that the patient came to the ED for a different purpose. A total of 4 nurses felt that this barrier is *not important*, 3 nurses felt that it is *minimally important*, 7 nurses felt that it is *somewhat important*, 10 nurses felt that it is *moderately important*, and 6 nurses felt that it is *very important*.

Table 9

Frequencies for Perceived Barriers

	1. Not Important	2. Minimally Important	3. Somewhat Important	4. Moderately Important	5. Very Important
Lack of Time	0 (0.00%)	2 (6.67%)	3 (10.00%)	12 (40.00%)	13 (76.67%)
Lack of Availability of Health Educators	0 (0.00%)	1 (3.33%)	8 (26.67%)	14 (46.67%)	7 (23.33%)
Lack of Nursing Interest in Providing Prevention & Educational Information	0 (0.00%)	6 (20.00%)	13 (43.33%)	6 (20.00%)	5 (16.67%)
Lack of Patient Interest in Prevention & Educational Services	0 (0.00%)	1 (3.33%)	6 (20.00%)	7 (23.33%)	16 (53.33%)
Uncertainty of the Educational Information to Provide	1 (3.33%)	5 (16.67%)	8 (26.67%)	7 (23.33%)	9 (30.00%)
Lack of Proper Education Materials to Give Patients	0 (0.00%)	1 (3.33%)	8 (26.67%)	12 (40.00%)	9 (30.00%)
Communication Difficulties With Patients	0 (0.00%)	4 (13.33%)	9 (30.00%)	7 (23.33%)	10 (33.33%)
Cultural Differences Between Nurses & Patients	2 (6.67%)	7 (23.33%)	6 (20.00%)	10 (33.33%)	5 (16.67%)
The Patient Came for a Different Purpose	4 (13.33%)	3 (10.00%)	7 (23.33%)	10 (33.33%)	6 (20.00%)

Summary

The determination of the frequency of education provided and the nursing attitudes toward health promotion activities for non-ACS chest pain patients at discharge was the aim of the PMAAQ survey. The questionnaire yielded demographic data, activities, and attitudes of participating nurses in the ED setting. Participants from diverse backgrounds and nursing experiences provided a variety of responses from the survey. Utilizing frequency tables, descriptive statistics from each survey item were represented. The research study's purpose was outlined and the research questions were addressed in the collection of participants' responses from the survey. Given the data received and the analysis of results, discussion, and reflection will provide greater insight into the meaning of the study's findings and the impact on future nursing education.

CHAPTER V

Discussion

The analysis of data obtained from the Preventive Medicine Attitudes and Activities Questionnaire (PMAAQ) contributed to the need of discussion and reflection toward the purpose of the research study. The review of this study helped to acknowledge how Dorothea Orem's Self-Care Deficit Nursing Theory (SCDNT) was incorporated into this study. Discussion of the findings also allowed an opportunity to reflect on how the research study's purpose was met and questions were answered. As weaknesses in current educational practices were recognized, discussing the impact of this study toward the future of nursing education may contribute to improved discharge teaching for non-Acute Coronary Syndrome (ACS) chest pain patients.

Using the PMAAQ, the purpose of the research study was to determine both the frequency of discharge education on cardiovascular health topics and the attitudes toward health promotion and education for non-ACS chest pain patients. Outcomes of this questionnaire illustrated responses given by emergency department (ED) nurses and contributed to the discussion of efficient discharge education in the ED setting.

Implication of Findings

Activities

The education and health promotion activities section indicated the frequency of cardiovascular health education provided to non-ACS chest pain patients at discharge. Individually, overall cardiovascular health issues, weight management, smoking cessation, and blood pressure control were demonstrated by frequency tables to reflect items six through nine of the survey.

Overall cardiovascular health issues. Given the data for overall cardiovascular health issues, the majority of ED nurses *rarely* educate on important cardiovascular issues. Nurses stated they were less likely to educate on the consumption of more fruits and vegetables than any other health topic. A total of 18 nurses stated that they *never* or *rarely* educate patients on increasing the consumption of healthy fruits and vegetables. ED nurses reported that the most frequent topic of education provided for non-ACS chest pain patients is smoking cessation. Results indicated that 13 nurses stated that they educate on smoking cessation *usually* or *always*.

Research indicated that the lack of proper discharge education for patients leaving the ED leads to poor post-discharge outcomes and readmission visits that impacts patients' lives and their careers (Han et al., 2009b). Given this knowledge, the responses from this survey item were alarming and significant. Many ED nurses are not educating on health issues that are pertinent and essential toward the well-being of individuals treated and discharged for non-ACS chest pain.

Weight management. Based on the frequency data regarding weight management education, a large majority of ED nurses *never* or *rarely* educate non-ACS chest pain patients on this topic. Responses indicated that many ED nurses are less likely to recommend patients getting a plasma glucose test to detect diabetes than any other weight management health topic. A total of 23 ED nurses stated they *never* or *rarely* educate on this issue. Although there was no particular health topic that ED nurses *usually* or *always* educated the most on, decreasing dietary fat consumption, decreasing caloric intake, and performing regular exercise were the top weight management health issues that ED nurses educate on. Overall, data indicated that ED nurses are infrequently

educating on weight management topics for overweight patients being discharged for non-ACS chest pain.

Findings from this survey question mimic the results from a similar study determining the amount of weight management education in the ED. In a study conducted by Taggart (2009), nurses were asked to report the frequency of all educational topics for patients seen in the ED, regardless of the reason for their visit. Taggart (2009) found that nurses very rarely provide health promoting advice to their overweight and obese patients who visited the ED.

Although the results are comparable, the lack of weight management education provided to non-ACS chest pain patients is an important finding. Research emphasizes a healthy diet, maintaining the recommended body mass index (BMI), and adequate daily exercise to ensure optimal cardiovascular health outcomes (Fonarow, 2005). Given the fact that poor discharge education may lead to poor post-discharge outcomes and readmission visits, results from this study indicate the need for more education provided on weight management for non-ACS chest pain patients (Han et al., 2009a).

Smoking cessation. Data regarding the frequency of smoking cessation education illustrated a variety of responses. Once again, the majority of nurses reported that they *never* educate on smoking cessation options and opportunities. Responses indicated that ED nurses are least likely to set a “quit date” for non-ACS chest pain patients who smoked. A large number of nurses state that they provide very little information on smoking cessation programs or self-help materials for these patients. Overall, 18 ED nurses reported that they *never* or *rarely* educate on setting a specific “quit date”, 16 nurses *never* or *rarely* educate on smoking cessation programs, and 16

nurses *never* or *rarely* educate on self-help materials. The most common educational topic of smoking cessation was the advisement of patients to quit smoking. A total of 16 nurses stated they *usually* or *always* advise patients to quit smoking during discharge education. Overall, nurses are frequently educating patients to quit smoking but are not educating on the availability of smoking cessation resources.

Data regarding the frequency of education provided on smoking cessation in this study is comparable to previous studies conducted within the ED setting. In a similar study conducted, only minorities of ED patients who smoke received advice on how to quit or were given the resources to assist the patient to quit (Katz et al., 2012). Katz et al. (2012) also found that smoking cessation education is effective with well-coordinated smoking cessation counseling by trained ED personnel.

Findings from this portion of the survey are significant in regards to necessary education for non-ACS chest pain patients. As nursing literature supports the importance of quality smoking cessation education in the ED, results from this portion of the survey support the need for greater discharge education on the availability of smoking cessation tools and resources for these patients.

Blood pressure control. Based on the frequency of education provided on blood pressure control, the majority of ED nurses reported that they *usually* educate on this cardiovascular health issue. In regards to blood pressure education, ED nurses were less likely to educate on weight loss for those who were overweight. A total of 11 nurses *never* or *rarely* advise weight loss for overweight patients. The most common blood pressure control issues that nurses educate on was medication adherence and the review of health risks associated with hypertension. A total of 21 nurses *usually* or *always*

educate on the importance of taking blood pressure medication regularly and 16 nurses reported that they *usually* or *always* educate on the health risks of hypertension. In comparison to other concepts within the activities portion of the PMAAQ, nurses are spending a greater amount of time educating on this subject for those patients being treated and discharged with non-ACS chest pain.

The frequency of blood pressure education found in this study is congruent with current nursing literature. Many nursing research studies emphasize the importance of blood pressure control, especially in patients experiencing any kind of chest pain. In a particular study regarding ED nursing education, researchers found that hypertension management was one of the leading health issues that nurses addressed for over 200 patients involved in the study (Taggart, 2009).

As blood pressure education is heavily supported throughout current nursing research, current results from this portion of the survey are encouraging. Data collected from the participants' responses suggested that nurses are frequently educating on this important matter for non-ACS chest pain patients.

Attitudes

The attitudes section of the survey assessed nurses' perceived effectiveness, importance, comfort, and barriers toward educating non-ACS chest pain patients at discharge. Utilizing individual frequency tables, descriptive statistics indicated the responses from items 10 through 13 of the PMAAQ survey.

Perceived effectiveness. Data collected on nurses' perceived effectiveness revealed how ED nurses feel regarding the education they provide non-ACS chest pain patients. Educational subjects included exercise, a healthy diet, smoking cessation,

weight reduction, and stress management. Based on the responses, an overwhelming majority of nurses felt *minimally effective* on all important cardiovascular health topics. Overall, only five nurses felt *very effective* in educating patients toward the variety of cardiovascular health issues listed. Most commonly, nurses felt *very effective* in teaching a healthy diet. Data indicated that two nurses felt *very effective* toward educating on a healthy diet for non-ACS chest pain patients. The largest amount of nurses felt *minimally effective* toward exercise and weight reduction. A total of 17 nurses felt *minimally effective* toward both exercise and weight reduction.

The lack of effectiveness perceived by nurses in this study is similar to other research investigations. Although this study was based on a variety of cardiovascular health topics for non-ACS chest pain patients, a study by Taggart (2009) found that nurses felt *minimally effective* to *somewhat effective* at providing health-promoting advice for all patients seen in the ED.

The lack of perceived effectiveness discovered during this research study is of concern and may be considered as an area for improvement toward future discharge education practices. Current nursing research suggests that ED nurses who view themselves as effective educators tend to provide health promotion and patient education more frequently (Taggart, 2009). As the activities portion of the survey indicated a need for more time spent on discharge education and health promotion, improving nurses' perceptions regarding their effectiveness as educators could be instrumental in providing more education for non-ACS chest pain patients.

Perceived importance. Perceived importance of specific cardiovascular topics by nurses indicated that the majority of nurses viewed all cardiovascular health topics as

very important for non-ACS chest pain patients. According to the data, ED nurses indicated that cholesterol levels are the least important cardiovascular health issue to educate on. Two nurses, the largest amount of nurses, felt that cholesterol levels were *not very important* for the education of patients being discharged with non-ACS chest pain. The most important educational topics perceived by ED nurses were blood pressure and smoking cessation. A total of 26 nurses felt that blood pressure was *very important* and 25 nurses felt that smoking cessation was *very important*. These results are important as they reflect the responses given earlier in the survey. Earlier results indicated education is frequently provided on advising patients to quit smoking and reviewing health risks of hypertension. This data suggests that the perceived importance of certain cardiovascular health topics influences the amount of education spent on these particular issues.

The study's findings toward perceived level of importance of cardiovascular health issues are similar with current nursing research. Taggart (2009) performed a similar study and also found that the majority of ED nurses felt that providing health-promoting advice to patients and their families was *moderately important to very important*, regardless of the health issue.

Results from this portion of the survey are significant in the fact that the high level of importance perceived by the participating ED nurses indicated an obvious awareness of important cardiovascular issues known to contribute to heart disease or a myocardial infarction event. As nursing literature supports the notion that adequate discharge education can minimize repeat visits, improve clinical patient outcomes, and lower costs, recognizing that nurses understand the importance of certain cardiovascular

health topics for non-ACS chest pain patients is encouraging for the health and well-being of these individuals (Malcolm, 2012).

Perceived comfort. Given the data based on the perceived level of comfort toward various chest pain statements, the majority of ED nurses *somewhat agree* with these statements. Nurses were less likely to agree with the statement that health education does little to promote their adherence to a healthy lifestyle. A total of four nurses *strongly disagree* with the statement that education for non-ACS chest pain patients does little for their health and well-being after discharge. ED nurses were most likely to *strongly agree* or *somewhat agree* with the statements that smoking cessation counseling is an effective use of their time as nurses. Results indicated that 22 nurses *strongly* or *somewhat agree* with the notion that smoking cessation education is an effective use of time.

Findings from this survey item relate to similar results discovered earlier in the study. Data found from previous survey items showed that nurses frequently educate on smoking cessation and perceive smoking cessation education as important. Results now suggest that nurses view smoking cessation as an effective use of their educational time. This finding is important as it conveys that ED nurses feel comfortable with providing smoking cessation education.

Current nursing literature supports the idea that nurses who are comfortable and knowledgeable of the content that he or she is teaching at discharge increases patient understanding (Gozdzialski et al., 2012). As indicated in the results of this particular survey item, nurses are somewhat comfortable in educating non-ACS chest patients, especially on the topic of smoking cessation. This finding is reassuring as non-ACS

chest pain patients must learn and understand a variety of cardiovascular issues that impact their quality of life after discharge.

Perceived barriers. According to the potential barriers to effective health promotion and disease prevention for non-ACS chest pain patients, the majority of ED nurses perceive these issues as *moderately* or *very important*. According to the data, ED nurses felt that the least important barrier to discharge education was the belief that patients came for a different purpose. Four nurses perceived this barrier as *not important*. The greatest barriers perceived by ED nurses were the lack of time and the lack of patient interest in prevention and educational services. A total of 25 nurses felt that the lack of time was *moderately* or *very important* and 23 nurses felt that poor patient interest in educational information was *moderately* or *very important*.

The barriers perceived by participants in this research study are very similar to the barriers indicated in previous nursing research studies. In a similar study conducted by Taggart (2009), lack of time was the most frequently reported perceived barrier as 92.8% of respondents rated this issue as *moderately* or *very important* to discharge education. In similarity with many other studies, Samuels, Stack, and Porter (2011) stated that the time-limited environment of the ED leads to poor communication and inadequate discharge education for patients. The lack of time and other perceived barriers found within this study indicated an important trend in ED discharge education that could possibly impact the quality of life for non-ACS chest pain patients after their ED visit.

Nursing literature supports the awareness of barriers so that improvements can be made in discharge education for all patients. Beagley (2011) emphasized that nurses must be aware of the barriers that impede patient learning and understanding. For

effective delivery of health information and education, Beagley (2011) recommended that nurses must assess the environment, resources, cultural differences, and the patient's readiness to learn prior to educating patients. Given the support from nursing literature, the barriers discovered within this study are significant toward implementing future improvements in discharge education for non-ACS chest pain patients.

Application to Theoretical Framework

Dorothea Orem's Self-Care Deficit Nursing Theory (SCDNT) served as the theoretical framework for the research study. Self-care demands, an interactive nurse-to-patient relationship, and nursing systems that meet patients' needs are all concepts of Orem's SCDNT (Kumar, 2007).

The proposed research questions for this study and the application of the PMAAQ toward non-ACS chest pain patients made Orem's SCDNT an appropriate theory to use throughout the study. The determination of how often nurses educate non-ACS chest patients on important cardiovascular topics and their attitudes toward health promotion and education was guided by the importance of addressing patients' self-care needs. Promoting self-care practices has been known to inform, strengthen, and empower patients (Surucu & Kizilci, 2012). To ensure that nurses are educating on the self-care needs of non-ACS chest pain patients, the PMAAQ utilized important cardiovascular health topics that these patients need toward health and well-being after discharge. The PMAAQ also allowed observation of nurses' perceived effectiveness, importance, comfort, and barriers toward providing effective education. These questions were supported by the notion that an interactive nurse-to-patient relationship must occur to meet to meet the self-care demands of non-ACS chest pain patients (Kumar, 2007). The

acknowledgement of nurses' attitudes toward health promotion and education also allows insight into how well ED nurses are educating and meeting the self-care needs of these patients. The nursing agency concept was the only concept of Orem's SCDNT that was unable to be utilized within the research study. The fast-paced nature of the ED setting makes creating a nursing agency a challenging task since patients are seen and treated during a short period of time. Although ED nurses often tailor their education for each individual patient, the utilization of this concept within the PMAAQ would have been irrelevant to the purpose of the research study.

Since the PMAAQ utilized many self-care needs that non-ACS chest pain patients require, findings from the research study were congruent with Orem's SCDNT.

Although results indicated that ED nurses could improve on the frequency of education provided to non-ACS chest pain patients, many nurses perceived self-care needs for these patients as being very important in the education they provide their patients. The acknowledgement of self-care demands for non-ACS chest pain patients signifies that nurses are aware of how these needs improve the health, life, and well-being for these patients after discharge (Kumar, 2007). The PMAAQ also addresses barriers that ED nurses feel inhibits effective discharge education and health promotion to non-ACS chest pain patients. In doing so, the survey encouraged nurses to identify sources that impact the learning process for patients and contribute to knowledge deficits for patients. In this research study, nurses perceived lack of time, lack of patient interest in prevention and educational services, and lack of proper educational materials to give patients as barriers to effective education. Identifying these barriers allows nurses to make positive changes in the delivery of discharge education and health outcomes of patients after discharge.

Limitations

Existing limitations within the study included the PMAAQ's original purpose, the sample obtained for the study, and the population of focus for the study.

Originally, the PMAAQ was created to assess primary care physicians' self-reported prevention behaviors, the perceptions about the effectiveness and importance of these activities, the comfort with addressing sensitive topics with patients such as drug use or sexual behavior, and perceived barriers to the delivery of clinical preventive services (Yeazel et al., 2006). Prior to the research investigation, the PMAAQ was modified to address nurses' responses toward the education of non-ACS chest pain patients. Topics within the survey were altered to discuss pertinent cardiovascular health issues. Although validity and reliability of the PMAAQ has been previously tested, one could argue that the modification of the survey's original purpose alters the validity of this tool for this study.

The sample of this research study consisted of a convenience sample of 30 nurses over a two week timeframe. Although this sample represented a large percentage of ED nurses working at the designated healthcare facility, one could argue that this sample is not an accurate depiction of education provided by all EDs in the United States. One could also argue that taking a sample over a longer period of time could yield a more accurate representation of the sample as a whole.

The population of focus for the study consisted of patients treated and discharged with non-ACS chest pain only. The study does not focus on the education toward one specific cardiovascular topic alone, such as hypertension or medication compliance.

Using a more specific topic for the study may help to quickly identify educational improvements needed for certain cardiovascular topics.

Implications for Nursing

Results from this research study are significant in regards to patient education provided by ED nurses. As many research studies have suggested, findings from this study reveal weaknesses in current discharge education practices and identifies the need for improvement for the future. The current nursing profession is continually searching for research that contributes to an evidence-based approach toward nursing care. Findings obtained from this research study provides statistical evidence that underlines the need for greater, high-quality ED nursing education for the population of patients treated and discharged for non-ACS chest pain.

Given the results from this research study, the future of ED nursing needs a greater emphasis on addressing common educational barriers and providing nurses with the education and tools they need to teach patients.

Current literature suggested that the ED setting is notorious for being a poor learning environment for patients. Given this fact, the future of ED nursing needs solutions that tackle known barriers, such as lack the time or a chaotic environment, to improve education given to patients.

As the population of patients being seen and treated for non-ACS chest pain grows, ED nurses need to be educated on pertinent cardiovascular topics that these patients need to learn. In order for nurses to feel comfortable and effective as a patient educator, ED nurses should become knowledgeable on the topics they are teaching (Taggart, 2009). ED nurses should be educated on why education for non-ACS chest

pain patients is important and how they can provide more educational resources for these patients.

Recommendations

Recommendations for future research include investigating the correlation between data and studying the effectiveness of discharge education from the patient's perspective.

The analysis of this research study simply yielded results regarding both the frequency of education provided on cardiovascular health topics and the attitudes toward health promotion and education for non-(ACS) chest pain patients. No statistical correlation between data was performed during this study, so future studies may benefit from doing so. Since participants in this study indicated a perceived lack of effectiveness towards cardiovascular topics for non-ACS chest pain patients, determining if these findings correlate with the years of experience or the educational level of nurses may provide greater insight into why nurses feel *minimally effective* in educating these patients. The correlation between perceived effectiveness and perceived barriers may also be examined in future studies. Correlating these two variables will help to identify specific obstacles that ED nurses encounter and recognize if these barriers have an impact on nurses' perceived effectiveness toward discharge education for patients.

The purpose of this study was to explore the effectiveness of discharge education for patients treated and discharged with non-ACS chest pain. Using the PMAAQ, the perspective of nurses in regards to their health promotion and educational activities and attitudes were the focus of this study. Obtaining the viewpoint of these patients would reveal even greater insight into how well discharge education was being taught by nurses.

Shifting the attention toward patients, instead of nurses, would enable researchers to understand the most beneficial teaching methods and educational resources for patients. Focusing on patients would also allow for an opportunity to recognize and clarify any misconceptions or questions that patients have regarding their discharge information.

Conclusion

The PMAAQ survey served as a tool that recognized both the frequency of cardiovascular education and the nursing attitudes toward discharge education and health promotion for patients treated for non-ACS chest pain. As Orem's SCDNT served as the backbone to this study, both strengths and weaknesses in current educational practices were discovered. Responses given by ED nurses throughout the survey illustrated knowledge of important cardiovascular issues but indicated that more education is needed for patients being discharged with non-ACS chest pain. As certain barriers were found to be common among the participants of this study, the future of ED nursing practice can utilize this data to make changes in the delivery of discharge education. This research study produced findings that recognized the need for improvements in educational practices and discovered how non-ACS chest pain patients are being empowered by ED nurses to take control of their health and well-being after discharge.

References

- Armer, J. M., Shook, R. P., Schneider, M. K., Brooks, C. W., Peterson, J., & Stewart, B. R. (2009). Enhancing supportive-educative nursing systems to reduce risk of post-breast cancer lymphedema. *Self-Care Dependent Care Nursing Journal*, 17(1), 6-15. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3405945/>.
- Beagley, L. (2011). Educating patients: Understanding barriers, learning styles, and teaching techniques. *American Society of PeriAnesthesia Nurses*, 25(5), 331-337. doi: 10.1016/j.jopan.2011.06.002.
- Bench, S., Day, T., & Griffiths, P. (2013). Effectiveness of critical care discharge information in supporting early recovery from critical illness. *Critical Care Nurse Journal*, 33(3), 41-52. doi: 10.4037/ccn2013134.
- Britz, J. A. & Dunn, K. S. (2010). Self-care and quality of life among patients with heart failure. *Journal of American Academy of Nurse Practitioners*, 22, 480-487. doi: 10.1111/j.1745-7599.2010.00538.x.
- Bulut, H., Tanrikulu, G., Dal, U., & Kapucu, S. (2013). How much do ED patients know about medication prescribed for them on discharge? A pilot study in turkey. *Journal of Emergency Nursing*, 39(3), 27-32. doi: 10.1016/j.jen.2008.12.017.
- Clark, P. A., Drain, M., Gesell, S. B., Mylod, D. M., Kaldenberg, D. O., & Hamilton, J. (2005). Patient perceptions of quality in discharge instruction. *Patient Education and Counseling Journal*, 59, 56-68. doi: 10.1016/j.pec.2004.09.010.
- Engel, K. G., Buckley, B. A., Forth, V. E., McCarthy, D. M., Ellison, E. P., Schmidt, M. J., & Adams, J. G. (2012). Patient understanding of emergency department

discharge instructions: Where are knowledge deficits greatest? *Academic Emergency Medicine Journal*, 19(9), 1035-1044.

doi: 10.1111/j.1553-2712.2012.01425.x.

Fearon-Clarke, J. E., Kleet, A. C., Bonnet, N., & Sheris, S. (2011). Heart failure education: A catalyst for transitional care. *Heart & Lung: The Journal of Acute and Critical Care*, 40(4), 375-376. doi:10.1016/j.hrtlng.2011.04.026.

Fonarow, G. (2005). *UCLA chest pain and ACS patient management guideline*. [PDF document]. Retrieved from <http://www.med.ucla.edu/champ/ACS05%20booklet.pdf>.

Gerber, T. C., Kontos, M. C., & Kantor, B. (2010). Emergency department assessment of acute-onset chest pain: Contemporary approaches and their consequences. *Mayo Clinic Proceedings*, 84(4), 309-313. doi: 10.4065/mcp.2010.0141.

Gignon, M., Ammirati, C., Mercier, R., & Detave, M. (2014). Compliance with emergency department discharge instructions. *Journal of Emergency Nursing*, 40(1), 51-55. doi: 10.1016/j.jen.2012.10.004.

Gozdzialski, A., Schlutow, M., & Pittiglio, L. (2012). Patient and family education in emergency department: How nurses can help. *Journal of Emergency Nursing*, 38(3), 293-295. doi: 10.1016/j.jen.2011.12.014.

Halmo, R., Galuszka, J., Langova, K., & Galuszkova, D. (2013). Self-care in patients with chronic heart failure. Pilot study: self-care includes problems. *Journal of Biomedical Papers*, 1-7. doi: 10.5507/bp.2013.044.

- Han, C. Y., Barnard, A., & Chapman, H. (2009a). Discharge planning in the emergency department: A comprehensive approach. *Journal of Emergency Nursing*, 35(6), 525-527. doi: 10.1016/j.jen.2009.01.015.
- Han, C. Y., Barnard, A., & Chapman, H. (2009b). Emergency department nurses' understanding and experiences of implementing discharge planning. *Journal of Advanced Nursing*, 65(6), 1283-1292. doi: 10.1111/j.1365-2648.2009.04988.x.
- Irmak, Z., & Fesci, H. (2010). Effects of nurse-managed secondary prevention program on lifestyle and risk factors of patients who had experienced a MI. *Applied Nursing Research Journal*, 23(3), 147-152. doi: 10.1016/j.apnr.2008.07.004.
- Katz, D. A., Vander, M. W., Holman, J., Nugent, A., Baker, L., Johnson, S., Hillis, S. L., & Titler, M. (2012). The emergency department action in smoking cessation trial: Impact on delivery of smoking cessation counseling. *Academic Emergency Journal*, 19(4), 409-420. doi: 10.1111%2Fj.1553-2712.2012.01331.x.
- Koelling, T., Johnson, M., Cody, R., & Aaronson, K. (2005). Discharge education improves clinical outcomes in patients with chronic heart failure. *Journal of the American Heart Association*, 111, 179-185.
doi: 10.1161/01.CIR.0000151811.53450.B8.
- Kumar, C. (2007). Application of Orem's self-care deficit theory & standardized nursing languages in a case study of a women with diabetes. *International Journal of Nursing Terminologies & Classifications*, 18(3), 103-110.
doi: 10.1111/j.1744-618X.2007.00058.x.

- LaSalvia, L., Nadkarni, P., & Bal, T. A. (2010). *Chest pain triage in the emergency department: An integrated diagnostics approach* [PDF document]. Retrieved from http://www.siemens.com/about/pool/de/unser_geschaeft/healthcare/diagnostics/perspectives-chest-pain-triage.pdf.
- Malcolm, G. (2012). Re-engineered discharge cuts readmissions. *Hospital Case Management, 20*(5), 70-75. Retrieved from <http://www.ahcmedia.com>.
- Manzini, F., & Simonetti, J. (2009). Nursing consultation applied to hypertensive clients: Application of Orem's self-care theory. *Revista Latino-Americana De Enfermagem (RLAE), 17*(1), 113-119. doi: 10.1590/S0104-11692009000100018.
- Mohammadpour, A., Sharghi, N. J., Khosravan, S., & Alami, A. (2009). Investigating the level of self-care and supportive-educative needs of patients with myocardial infarction, based on Orem's model. *Self-Care & Dependent-Care Nursing Journal, 17*(1), 6-15. Retrieved from <http://www.orem-society.com/index.php/publications/ios-journal>.
- Peterson, J. C., Link, A. R., Jobe, J. B., Winston, G. J., Klimasiewfski, E. M., & Allegrante, J. P. (2013). Developing self-management education in coronary artery disease. *Heart & Lung: The Journal of Acute & Critical Care, 43*, 133-139. doi: 10.1016/j.hrtlng.2013.11.006.
- Samuels, M. E., Stack, A. M., & Porter, S. C. (2011). Effective discharge communication in the emergency department. *Journal of the American College of Emergency Physicians, 60*(2), 152-159. doi: 10.1016/j.annemergmed.2011.10.023.

Shahrbabaki, P. M., Farokhzadian, J., & Hasanabadi, Z. (2012). Effect of self-care education on patient's knowledge and performance with heart failure. *Procedia: Social and Behavioral Sciences*, 31, 918-922. doi: 10.1016/j.sbspro.2011.12.169.

Statistical Packages of the Social Sciences (SPSS) statistics. (2014). *IBM software*.

Retrieved from:

<http://www-01.ibm.com/software/analytics/spss/products/statistics/>.

Sürücü, H. & Kizilci, S. (2012). Use of Orem's self-care deficit nursing theory in the self-management education of patients with type 2 diabetes: A case study. *Self-Care, Dependent-Care & Nursing*, 19(1), 53-59. Retrieved from

http://www.mss.public.lu/publications/blqs/blqs029/blqs_29.pdf.

Taggart, M. (2009). The attitudes & activities of registered nurses towards health promotion & patient education in the emergency department. *National Emergency Nurses Affiliation Outlook*, 31(1), 15-19. Retrieved from <http://nena.ca/>.

Tveiten, S., & Meyer, I. (2009). Easier said than done: Empowering dialogues with patients at the pain clinic-the health professional's perspective. *Journal of Nursing Management*, 17, 804-812. doi: 10.1111/j.1365-2834.2008.00921.x.

United States Centers for Disease Control and Prevention. (2012). *Emergency department visits*. Retrieved from <http://www.cdc.gov/nchs/fastats/ervisits.htm>.

Yeazel, M., Bremer, K., & Center, B. (2006). A validated tool for gaining insight into clinicians' preventive medicine behaviors & beliefs: The PMAAQ. *Preventive Medicine Journal*, 43, 86-91. doi: 10.1016/j.ympmed.2006.03.021.

- Weiss, M. E., Yakusheva, O., & Bobay, K. L. (2011). Quality and cost analysis of nurse staffing, discharge preparation, postdischarge utilization. *Health Services Research Journal, 46*(5), 1473-1494. doi: 10.1111/j.1475-6773.2011.01267.x.
- Zavala, S., & Shaffer, C. (2009). Do patients understand discharge instructions? *Journal of Emergency Nursing, 37*(2), 138-140. doi: 10.1016/j.jen.2009.11.008.