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# Increasing Patients' Understanding of Prescribed Medication Adherence

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*Walden University*

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# Walden University

College of Health Sciences

This is to certify that the doctoral study by

Valarie F. Thomas

has been found to be complete and satisfactory in all respects,  
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the review committee have been made.

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Walden University

2018

Abstract

Increasing Patients' Understanding of Prescribed Medication Adherence

by

Valarie Finley Thomas

MS, Walden University, 2012

BS, Chicago State University, 2009

Project Submitted in Partial Fulfillment

of the requirements for the Degree of

Doctor of Nursing Practice

Walden University

May 2018

## Abstract

The cost of healthcare in the United States has increased due to growing numbers of patients who live with chronic health problems, such as heart disease. The cost of healthcare is compounded by the cost in terms of complications of cardiovascular disease secondary to medication non-adherence. Education about medication use and adherence, safety, and side effects was needed for patients in a cardiovascular unit to improve adherence to medications as prescribed. Results of a health care provider (HCP) and nursing staff needs assessment provided by the site showed the need for improved cardiovascular medication education. The project focused question asked if cardiovascular patient medication education provided to HCPs and nursing staff would be incorporated into practice by the HCPs and nursing staff. The purpose of the project was to improve the education provided to patients by the HCPs and nursing staff. A literature review provided content for the educational program. Strategies to promote adherence and medication safety and a patient education worksheet were presented with guidance on implementation. Post education qualitative results from HCPs and nursing staff showed that the sheet was implemented and helpful with educating cardiovascular patients. This project promotes positive social change by the implementation of a patient education program that may improve patient education and adherence to cardiovascular medications. As a result, improved adherence to medications may reduce patient and healthcare related costs long term.

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## Dedication

I dedicate this project to my amazing family. Edward, my love for you is unending. You allowed me space to start and complete this journey with much love, support, and encouragement.

To my wonderful girls who are now lovely young women, you are God's gift to me and the greatest joys in my life. I love you each severely and unreservedly. I am proud of the women you have and are becoming. Most of all, I am proud of the love you have for God and each other.

## Acknowledgements

I would like to thank my Heavenly Father for His precious love for me and the strength and endurance for which He has provided for me to be able to complete this project. Without Him, I would not have been able to make it to this point.

I would also like to give a special thanks to my outstanding committee. Dr. Hayden, I am so blessed and honored to have you as my chair and advisor. You are an exemplary role model and an encourager. I am a better student, writer, and change agent because of you. I realize we took this journey together and oftentimes it was rough but thank you so much for your time and guidance.

## Table of Contents

Section 1: Nature of the Project .....	1
Introduction.....	1
Problem Statement.....	2
Purpose Statement.....	3
Practice-Focused Question.....	4
Nature of the Doctoral Project .....	5
Significance/Relevance to Practice.....	6
Implications for Positive Social Change in Practice.....	8
Summary.....	9
Section 2: Background and Context .....	11
Introduction.....	11
Practice-Focused Question.....	14
Definitions of Terms.....	15
Nursing Practice and Patient Education.....	16
Strategies to Improve Patient Compliance to Prescribed Medication Regimen.....	18
Advancement of Nursing Practice .....	19
Local Background and Context .....	19
Role of the DNP Student.....	20
Summary.....	22
Section 3: Collection and Analysis of Evidence.....	24
Introduction.....	24



Practice-Focused Question.....	25
Definitions of Terms.....	25
Literature Search Strategy.....	26
Project Design and Participants .....	26
Planning and Interventions .....	29
Assumptions and Limitations .....	30
Summary.....	31
Section 4: Findings and Recommendations.....	33
Introduction.....	33
Practice-Focused Question.....	33
Summary of Source of Evidence .....	34
Findings and Implications.....	34
Strength and Limitations of the DNP Project .....	36
Recommendations for Future Projects.....	37
Summary.....	38
Section 5: Dissemination Plan .....	39
Dissemination of DNP Patient Medication Education Project .....	39
Analysis of Self.....	40
Summary.....	41
References.....	43

Appendix A: Patient Medication Information Sheet.....48  
Appendix B: Patient Medication Project Power Point for HCPs .....49

## Section 1: Nature of the Project

### **Introduction**

Chronic disease management is an expensive and an ongoing problem for the United States health care system, leading to increased healthcare costs, decreased productivity in the workplace, reduced quality of life, and death. (Centers for Disease Control and prevention [CDC], 2016; Salas & Miyares, 2015; Van Houtum, Rijken, & Groenewegen, 2015). According to Kelly, McCarty, and Sahm (2014) the definition of medication adherence is the degree to which patients consume medications as recommended by their health care provider (HCP). Medications are a component of chronic disease management, and in order for medications to be effective, the medications need to be taken as prescribed. Noncompliance with medication regimes, especially among cardiovascular patients, is as high as 50%-80% of patients not taking their medications as prescribed (Aghabekyan, Thompson, & Abrahamyan, 2012).

There may be several reasons why patients are noncompliant with the prescribed medication regimen. Whatever the cause, there are risks as severe as death when patients do not adhere to the recommended medication regimen. To increase patient compliance, every patient should receive appropriate education regarding the medication use and side effects, as well as the treatment regimen for all prescribed medications, and the HCP should also include the families in the education of the medication regimen when warranted. The purpose of this patient medication education project was to provide education to HCPs and staff for medication use and safety for cardiovascular patients in a local primary care clinic. Receiving appropriate patient education via the HCP in the treatment and management of chronic and acute diseases may lead to improved patient outcomes and patients leading healthier lives.

## **Problem Statement**

Several of the patients who arrive at the local primary care clinic for treatment have elevated blood pressure, elevated blood glucose levels, and are mainly obese. As the researcher, I have an extensive background in cardiovascular nursing and was aware that these conditions may lead to heart disease and possibly death. Therefore, providing appropriate education regarding the medication regimen with a focus on patients who are at risk for, or who have cardiac disease was the foundation for this DNP project. According to a Certified Registered Nurse Practitioner-Board Certified at the local primary clinic, patients are often cited as “not taking their medications or following physician’s orders.” However, patients often stated that reasons for noncompliance were the inability to afford medications and a lack of understanding the purpose of the medication and its’ importance.

Providing appropriate patient education based on this knowledge provided by the patients may decrease the patients’ noncompliance with the prescribed medication regimen. According to Marshall, Dall’Oglio, Davis, Verret, and Jones (2015), one of the primary roles of the nurse is to provide sufficient education to the patients and families on medications and the nurse should also assess the patients’ understanding of the medications as a method to decrease the issue of noncompliance. Often, what a provider believes to be proper education of medications for patients may be lacking vital elements, yet the HCP expects that patients will follow the prescribed medication regimen (Tamura-Lis, 2013). All patients can benefit from proper education; however, the focus of the patient medication education in this project was for cardiovascular patients. According to the Center for Disease Control and Prevention (CDC, 2016) cardiac disease is the leading cause of death in both men and women, and approximately 610,000 people die from heart disease each year in the United States. Although the increased

incidence of death may be an issue, an additional problem related to medication noncompliance is the extremely elevated related healthcare costs estimated at \$1.3 trillion annually for the treatment of chronic conditions and lost productivity in the workforce (CDC, 2016; Comlossy, 2013).

A focus of this doctoral patient medication education project was to gain first-hand information from the HCP regarding the number of patients at the local primary care clinic who have cardiovascular disease or who may be at risk for developing cardiac disease and review the medication regimen as well as factors that may have an influence on the patients' ability to follow the prescribed medication regimen. Following the gathering of the information a medication education program for the providers at the local clinic site was developed. Following education of the providers, the HCP and clinicians can provide the appropriate education as an effort to increase compliance and improve, as well as maintain, optimal health. According to Minkin et al. (2014) healthcare clinicians can provide encouragement through proper education and provide information on lifestyle modifications for patients to adhere to the treatment plan; the patients must make the changes in compliance and behavior. As a part of the results for the project, HCPs and practitioners were encouraged to explore reasons for medication noncompliance and evaluate and educate patients and families on prescribed medications to improve medication compliance and promote healthier patient outcomes.

### **Purpose Statement**

Improving patients' health is an overarching goal when prescribing medications as a form of treatment for acute and chronic illnesses. HCPs and nurses are to ensure patients and their families have a clear understanding of the medications and can obtain and follow the prescribed medication regimen. According to Lehnbohm, Raban, Walter, Richardson, and Westbrook (2014),

comprehensive medication information, which includes any changes in current medications, is a vital component to the education of patients by the practitioner to prevent medication errors. The purpose of this patient medication education project was to provide education to HCPs and staff for medication use and safety for cardiovascular patients in a local primary care clinic. Another purpose of creating this patient medication education project was to provide HCPs and clinicians with methods to deliver proper medication education to patients, to determine the preferred education methods of patients receiving medication education, and to explore the reasons for noncompliance to the prescribed medication regimen in patients with heart disease or those at risk for developing heart disease. Though the education may also be used for other chronic and acute illnesses, heart disease was the focus of this DNP project. Understanding the overall experiences of the patients in relation to their prescribed medications and noncompliance can help determine how best to provide appropriate education regarding the necessity and appropriate use of all prescribed medications. Although there were significant data in the research reviewed for this DNP project, there has been limited understanding of the reasons why patients may be noncompliant other than the costs of medication and aging of the patient (Jimmy & Jose, 2011). I sought to offer methods for the HCP and clinicians on determining reasons for noncompliance by addressing the medication education needs of the patient and their behaviors leading to medication noncompliance.

### **Practice-Focused Question**

This patient medication education project provided an evaluation of current healthcare practices regarding medication administration and education. The following question was answered:

What are the precipitating factors leading to adult patients' noncompliance with the prescribed medication regimen and how can HCPs and clinicians provide useful patient medication education to overcome those factors?

### **Nature of the Doctoral Project**

To understand medication noncompliance in patients with heart disease or who are at risk for heart disease, information was provided by the HCP at the local clinic from the electronic health records (EHRs) for this DNP project. Items such as patients with ages greater than 18 with heart disease or conditions putting the patients at risk for heart disease, average age of the patients with heart disease, educational level of patients, type of insurance of the patient or if the patient was a self-pay patient with no insurance, race of the patient, and number of medications taken by the patients were explored. The results of the information received from the electronic database were used to determine possible reasons for noncompliance in the patient population at the local clinical site and infer these findings on a broader scale to promote patient education based on the needs of the patients in order to increase patient medication compliance. It is not enough to say patients are noncompliant and penalize patients for not adhering to the prescribed medication regimen, but it is necessary to seek reasons for noncompliance and engage the patients in appropriate education to increase compliance. In response to the results from the patient information compiled from the information located in the EHR, I developed and presented an educational program for the HCPs at the local clinical site. The educational program was developed to ensure patients who are at risk for developing heart disease and other chronic illnesses receive the appropriate intervention and patient education from the HCP and clinicians as identified by the HCP and clinician at the time of the clinic visit.

A descriptive correlational quantitative research design was used for the DNP project to assess the information provided by the HCP from the EHR regarding patients who were at risk for being noncompliant with medications prescribed by the HCP at the local clinic site. The purpose of this patient medication education project was to develop an education program for HCPs and clinicians. Through this project, I further sought to encourage the HCPs to explore the reasons for noncompliance to the prescribed medication regimen in patients with heart disease or those at risk for developing heart disease to provide appropriate medication education to patients receiving medication education. By conducting the review of the information provided by the HCP and staff from the EHR, several avenues such as possible financial abilities to afford the medications, patients' educational level, and age of patient were considered as possible reasons for noncompliance of the prescribed medication regimen to provide future resources to promote compliance to improve health and reduce the cost of health care.

### **Significance/Relevance to Practice**

Chronic disease and health problems, such as cardiovascular disease and cancer, are the leading causes of mortality accounting for 47% of deaths in the United States (Comlossy, 2013). With increasing numbers of chronic health problems, particularly patients with heart disease, the cost of healthcare will also increase when patients are noncompliant with their medications. According to Valentino (2016), the lack of medication compliance costs \$337 billion and results in approximately 11% of overall health care spending in the United States. This is significant and may reduce the health care systems' sustainability relating to the cost of health care and the burden placed on the patients, providers, and the insurers for health care needs. Increasing patients' and their families' understanding of how to manage chronic disease, such as cardiovascular disease, is vital in decreasing healthcare costs and further health complications



and mortality (Salas & Miyares, 2015). Therefore, patient medication education will be necessary as an effort to increase patients' understanding of the prescribed medication regimen, increasing the likelihood of compliance, and thereby improving health outcomes of chronic cardiovascular diseases and decreasing healthcare costs. As stated by Kelly et al. (2014), medication adherence is vital to the process of chronic disease management. For instance, with heart failure as a chronic cardiovascular disease affecting 5.7 million patients in the United States, it is the leading cause of morbidity, mortality, and hospitalization (Salas & Miyares, 2015). Furthermore, the estimated cost for treatment of heart failure in the United States is \$37.2 billion (Salas & Miyares, 2015). The provision of appropriate patient medication education is significant for HCPs and organizations to improve both clinical patient outcomes and financial implications. These outcomes may further assist future HCPs with understanding the significance of properly educating patients when prescribing medications for treatment of chronic and acute disease management.

This DNP patient medication education project benefits various entities, including myself, patients, and HCPs through appropriate education leading to decreased healthcare cost. Key stakeholders involved several groups of people. First, included in the stakeholders were the patients who are the beneficiaries of the medication education project. The second set of key stakeholders were the HCPs or prescribers of medications for treatment of illnesses as this includes cost for medications and treatment. Finally, the patients' insurers who agree to pay for the required medications needed for the care of those chronic diseases were considered stakeholders. Each of these stakeholders will be affected by the health care outcomes of the patients.

The project also provides evidence that appropriate patient education can lead to an increased willingness to adhere to the prescribed medication regimen. According to Adams (2010), the management of chronic disease and prevention relies heavily on the providers' communication practices. Verbal and nonverbal communication is crucial when providing patient medication education to ensure patients' understanding of the medication teaching. The education and adherence to the prescribed medications could lead to an increase in health benefits and health outcomes while creating an improved quality of care based on the HCP's methods of healthcare delivery with patient education being a vital part of that delivery. According to Shiovitz et al. (2016) two reasons patients do not adhere to the overall HCP's regimen are due to the patients' perception of benefits and risks and poor communication between doctor and patient. The significance of the changes resulting from the DNP patient medication education project may include lower healthcare costs of treatment incurred for patients as well as a decrease the United States' healthcare financial burden. The DNP patient medication education project may also be used in many areas of healthcare to ensure patients have a clear understanding of procedures and practices required to treat their chronic and acute illnesses.

### **Implications for Positive Social Change in Practice**

The implementation of the patient medication education project could change the approach of HCPs in their attempt to provide education to patients and families regarding medication administration and adherence. The education project placed a great deal of the burden regarding patients' adherence to the medication regimen on the prescriber (Kelly et al., 2014). The project approached patient care from a different perspective, viewing the patient education as the HCP's responsibility to ensure patients have all the necessary information regarding their medications as the medications relate to the illness or disease. Because the HCP has the

necessary knowledge on chronic health conditions and medications needed for treatment, the medication education project places a shared responsibility on the HCPs, patients, and families to increase adherence to the prescribed medication regimen. In this approach, patients now have the ability to participate in an active role of their healthcare. According to Ross, Ohlsson, Blomberg, and Gustafsson (2014), the care becomes centered on the patient when the patients assume an active role in their health care through shared decision making.

According to Arnetz and Zhdanova (2014), the patients and healthcare practitioner form a partnership where the patients' needs, values, and preferences are respected when developing clinical decisions regarding the patients' needs. The involvement of the patient is vital in producing quality health care (Ross et al., 2014). Finally, the project was an attempt to establish a patient education delivery model for management of chronic illnesses. According to Shiovitz et al., (2016), one of the reasons for nonadherence to the medication and treatment regimens may be poor communication between the doctor and patient. Therefore, establishing a patient education delivery model between the HCP and patient in which the patients and their families have access to healthcare information regarding diseases and treatment in a meaningful way in a language that is easily understood increases the patients' likelihood of adherence.

### **Summary**

In Section 1, I discussed how medication compliance is a vital component to reducing and treating cardiovascular disease as well as other major chronic illnesses. To increase compliance, it is important to provide the necessary education regarding the patients' prescribed medication regimen and the importance of taking the medication as prescribed for treatment of the disease. Patient education should be provided to every patient regardless of whether the medications are newly ordered or if the medications are a part of a long-term regimen. The

education must be easily understood by the patient and/or caregiver. In providing patient education, patients are more likely to adhere to the prescribed regimen, have better health outcomes and reduced hospital admissions, and demonstrate a decrease in overall health care costs. Section 2 includes the review of the literature and theoretical framework.

## Section 2: Background and Context

### **Introduction**

Several of the patients who arrive at the local primary care clinic for treatment have elevated blood pressure, elevated blood glucose levels, and are mainly obese. Many of the patients are noncompliant with the prescribed medication regimen. Patients have often stated that reasons for noncompliance are the inability to afford medications and a lack of understanding the purpose of the medication and its' importance. Therefore, providing appropriate education regarding the medication regimen with a focus on patients who are at risk for, or who have cardiac disease was the foundation for this DNP patient medication education project. The purpose of this patient medication education project was to provide education to HCPs and staff for medication use and safety for cardiovascular patients in a local primary care clinic. Another purpose of creating this patient medication education project was to provide HCPs and clinicians with methods to deliver proper medication education to patients, to determine the preferred education methods of patients receiving medication education, and to explore the reasons for noncompliance to the prescribed medication regimen in patients with heart disease or those at risk for developing heart disease.

The question used for the DNP medication education project addressed precipitating factors leading to noncompliance with the prescribed medication regimen for adult patients. This patient medication education project provided an evaluation of current healthcare practices regarding medication administration and education and answered the question regarding precipitation factors leading to noncompliance of the medication regimen in adult patients. This project also involved developing an education program for HCPs and clinicians to provide proper patient medication education. In this section, I have reviewed the evidence in the current

literature to identify best practice methods for patient medication education and to identify reasons for noncompliance of the prescribed medications, especially in patients with heart disease or who may be at risk for developing heart disease. According to Safford (2017), attempting to improve medication compliance is a major challenge in medicine today. Safford stated that decades of research have been completed on medication noncompliance and as many as 50% of patients in a developed country such as the United States who are chronically ill do not take their medications as prescribed. The problem of medication noncompliance along with providing appropriate patient education was addressed in this patient medication education project.

Heart disease is the leading cause of death, with greater than 600,000 deaths annually in the United States (Vaughan, Quick, Pathak, Kramer, & Casper, 2015). Providing appropriate patient education including the disease process and prescribed medication regimen is vital to improving patient outcomes and decreasing healthcare costs. According to Aghabekyan, Thompson, and Abrahamyan (2012), coronary heart disease (CHD) is a major cause of mortality and morbidity throughout the world with over 7.2 million deaths annually; according to the CDC (2015), approximately 610,000, or 1 in 4 people die in the United States every year from heart-related diseases. Many heart-related diseases can be managed by proper medications, medication adherence, and lifestyle adjustments. The process of disease management and medication compliance heavily relies on information presented by the HCP and the information received by the patients and families. This disease management process may demand improvement in the way the HCP provides patient education. Although most HCPs provide adequate education, it is imperative that all healthcare providers understand the importance of appropriate patient medication education. There is also a need for the healthcare providers to have increased patient

understanding of patient health behaviors to improve survival and disease management of heart-related diseases. Providing education to patients with heart disease is vital, given the fact that patients with cardiovascular disease may be at an even greater risk for increased death due to noncompliance of prescribed medications rather than reaching more favorable outcomes such as improvement in blood pressure and cholesterol levels (Hussein et al., 2016). Eskridge (2010) stated that the Joint National Committee report revealed a direct relationship between hypertension and a stroke, myocardial infarction, and heart failure.

Patients diagnosed with heart disease may have an increased chance of survival and disease management when there is an adequate understanding of the importance of following the prescribed treatment plan (Adams, 2010). It becomes imperative that the HCPs are aware of the patients' ability to understand the necessary education as well as understand the patients' readiness to learn regarding the treatment plan as this may be a factor for nonadherence to the prescribed regimen. Oftentimes patients are unable to comprehend the HCP's presentation of patient education, nor are the patients motivated to follow the prescribed regimen. According to Adams (2010), motivation is considered a crucial factor in the patients' decision regarding medication compliance. Patients who are motivated will more likely adhere to the recommended lifestyle adjustments as well as the prescribed medication regimen (Adams, 2010).

Understanding the reasons for patient noncompliance or lack of motivation to remain compliant to the prescribed medication regimen is addressed in the patient medication education project.

Noncompliance to medication therapy of any chronic disease is significantly associated with the socioeconomic status, costs associated with prescription medications, the physical ability to take the medication, side effects of the medications, poorly provided instructions for use, and instructions provided by the physician (Hussein et al., 2013). The evidence in the

literature suggested that providing appropriate education to patients regarding the importance of adhering to the prescribed medication regimen, will increase the likelihood of a change of behavior (Shah, Desai, Gajjar, & Shah, 2013). Patients perceive the treatment and medication education as beneficial when the treatment plan has been thoroughly explained and when they receive proper education regarding the prescribed medication regimen.

### **Practice-Focused Question**

This patient medication education project provided an evaluation of current healthcare practices regarding medication administration and education. The following question was answered:

What are the precipitating factors leading to adult patients' noncompliance with the prescribed medication regimen and how can HCPs and clinicians provide useful patient medication education to overcome those factors?

### **Johnson's Behavioral System Model (JBSM)**

The JBSM of nursing (Johnson, 1968; Parker & Smith, 2010; Reynolds & Cormack, 1991) was used to guide this medication education project. The JBSM consists of eight components or subsystems that address the behavior for change of an individual based upon the interactive and interdependent dimensions of the person (Parker & Smith, 2010). The eight subsystems of the JBSM include

1. ingestive which is behaviors associated with obtaining the necessary resources from one's outside environment in order to form an operational association with the environment;
2. eliminative which is the release of elimination waste products;
3. affiliative which is the development and maintenance of relationships and



communication skills;

4. dependency includes accepting assistance from others in the outside environment;
5. aggressive-protective in which the patients may perceive a threat from the environment;
6. sexual relates to the purpose of enduring pleasure and procreation;
7. achievements associated with mastery of self for the purpose of producing a desired effect;
8. restorative which is associated with restoration and recovery (Reynolds & Cormack, 1991).

The DNP patient medication education project addressed Subsystems 3, 4, 5, 7, and 8 from the JBSM which allowed the opportunity to determine the reasons for medication nonadherence as well as to assist the patient in moving toward a goal of optimum health. The JBSM uses nursing diagnoses to identify health problems and provide an explanation for the individuals' responses to the health problems. As Johnson (1968) discussed, patients who experience a coronary event and are hospitalized for weeks may find that there is an imbalance in the patient's ability to follow the outlined treatment of the providers. Therefore, nursing must address the more dominant part of the patients' needs relating to the subsystems outlined in the JBSM because the HCPs may meet resistance to change by the patient due to the patient's current condition.

### **Definitions of Terms**

The key terms in this project have been given the following operational definitions.

*Adherence:* The act of doing what is required (Merriam-Webster, 2015).

*Cardiovascular disease:* Any disease of the heart and blood vessels, including atherosclerosis,

cardiomyopathy, coronary artery disease, peripheral vascular disease, and others (“*Cardiovascular disease*,” 2009).

*Compliance*: The act or process of doing what one has been asked or ordered to do: the act or process of obeying (Merriam-Webster, 2015).

*Education*: The process of teaching someone (Merriam-Webster, 2015).

*Prescribed*: To officially tell someone to use a medicine, therapy, diet, and so forth as a remedy or treatment (Merriam-Webster, 2015).

*Regimen*: A systematic plan (as of diet, therapy, or medication) especially when designed to improve and maintain the health of a patient (Merriam-Webster, 2015)

### **Nursing Practice and Patient Education**

Patient education should be considered a vital part of patient care. It is a critical component of the nurses’ role (Blevins, 2015). Ensuring patients have a clear understanding of their health status and prescribed medication regimen is one method for empowering the patient to have the ability to participate in their healthcare management. According to Bergh, Johansson, Persson, Karlsson, and Friberg (2015), patient education includes planned educational activities created to improve health behaviors of patients. Each educational plan must be specific for the patient to which the education is being provided. As stated by Chick, Negley, Sievers, and Tammel (2012), disease-specific patient education uses appropriate educational material and provides a plan for the nurse and patient to partner, thereby increasing the patients’ ability to manage their care. Oftentimes what happens in the patient education process is nurses and HCPs make assumptions that patients understand the prescribed regimen without appropriately ensuring patients understand why they need to be educated regarding the prescribed regimen.

According to Whitman (2015), adult learners want to gain a greater understanding of why they need to learn something before actually participating in the learning process. Nurses are often providing complex educational information to patients in a hurried process due to time restraints. During the hurried process, nurses fail to determine the patient needs and current level of knowledge (Whitman, 2015). Providing patients with correct information based on the patients' needs and concerns is just as important as ensuring the patient understands the prescribed medication regimen. Attempting to provide any form of patient education without first addressing the overall patient needs and concerns leads to patient frustration and a lack of patient understanding during the education process (Whitman, 2015). Providing appropriate education to patients regarding the importance of adhering to the prescribed medication regimen will increase the likelihood of improvement in behaviors regarding medication compliance (Shah et al., 2013).

The DNP project provides nurses and HCPs with necessary information for delivering patient education to increase the patients' understanding of the medications being prescribed to promote healthy outcomes. It is staggering to see the numbers for the cost of health care continue to rise based on medication noncompliance. With this project, I sought to determine the possible reasons for noncompliance and promote education to encourage nurses and healthcare providers to increase the amount of appropriate education to foster compliance in the adult patient. Determining the reasons for noncompliance is the first step in the process, then followed by ensuring patients have a solid understanding of what is being required of them regarding their medications to assist in the management of their illnesses.

### **Strategies to Improve Patient Compliance to Prescribed Medication Regimen**

Patient education should always begin with the patient in mind. Involving the patient in the education process is necessary not only to ensure understanding, but also to empower the patient in assuming some ownership of his or her own healthcare management. Partnering with the patient also allows the nurse to tailor the patient education to the needs of the patient.

According to Whitman (2015), addressing the patient needs allows the nurse to provide specific education in a manner that encourages the patient to adhere to the prescribed regimen which leads to better patient outcomes. The first approach to patient education should be to conduct a patient needs assessment. A needs assessment will allow the nurse and HCP to determine the best approach for engaging the learner and what learning activities are the most effective.

According to Catalan, Jackson, and Greenberg (2014), a needs assessment determines barriers such as communication, as well as physical, emotional, and cultural influences that might impede the learning process. The next approach is to use the appropriate educational learning tools. The use of printed or written materials, visual demonstrations, question and answer sessions where patients can express any concerns or seek clarifications, and a secure environment where the patient feels safe and uninterrupted are beneficial during the educational process (Friedman, Cosby, Boyko, Hatton-Bauer, & Turnbull, 2011). The final approach is to complete the educational process by providing the appropriate patient education regarding the disease process and prescribed treatment plan that includes the patient medications. The patient education process should provide strength to the patients in their ability to prevent problems and manage their disease process (Whitman, 2015).

### **Advancement of Nursing Practice**

According to the DNP Essentials from the American Association of Colleges of Nursing (AACN, 2006) there is a major focus on evidence-based practice and applying the evidence into advanced nursing practice. The DNP patient medication education project clearly defines Essentials I, II, and III. Essential I: Scientific underpinnings reflect the complexity of practice and have been used for this project based on the principles and laws that govern the life process, well-being, and optimum function of human beings. Essential II: Organizational and systems leadership for quality improvement and systems thinking was used based on advancing nursing practice that emphasizes practice, ongoing improvement of health outcomes, and ensuring patient safety. Essential III: Clinical scholarship and analytical methods for evidence-based practice was used to design and direct quality improvement methods to promote safe and effective patient-centered care to improve practice and the practice environment (AACN, 2006). Through identification of the practice problem and careful review of the literature, I, as the DNP student was able to provide strategies to address the problem at the local primary care clinic and apply the evidence found in the literature to promote positive change and better health outcomes.

### **Local Background and Context**

The local primary care clinic practicum site does not have formal policies and procedures in place relating to patient education and has limited documentation of patient education. The medications are not currently being discussed at any length during the time of the visit. The clinic patients are frequently patients who may be lacking financial resources or insurance as the primary care clinic also has a self-pay or cash policy based on the current need(s) of the patient for patients who are uninsured. The ability to provide patient education to this group of patients,

as well as all those who are insured may improve medication compliance and improve health outcomes.

In the local primary care clinic practicum site patients frequently visit the clinic who have either allowed their prescription medications to lapse or state they are taking only half the dose due to cost, or believing that the medications are not truly needed. According to Safford (2017), medication compliance is especially serious in areas such as rural Alabama, as this population has some of the worst health outcomes in the United States. Though there is critical need for medication compliance relating to the well-being of patients globally, noncompliance to the prescribed medication regimen was addressed in a rural primary care clinic in Alabama. The DNP project focused on providing education to HCPs and clinicians who are responsible for medication education to patients, and a major focus was placed on patients with cardiovascular illnesses, as according to Safford (2017), cardiovascular mortality, diabetes, and obesity rates are increased in the black belt area of Alabama. Considering this critical need, the patient medication education process and the effectiveness of the prescribed treatment is vital to the health of the patient and the sustainability of the healthcare system overall. According to Jimmy and Jose (2011), patients, HCPs, and healthcare organizations all have a role to play in increasing medication adherence as nonadherence or noncompliance leads to worsening of the disease or illnesses and increased health care costs.

### **Role of the DNP Student**

The patient medication education project is vital to the advancement of quality care and patient outcomes. The patient medication education project provides such valuable education to HCPs for relaying information to patients who not only have difficulty adhering to the prescribed medication regimen, but also who have legitimate and perceived barriers to adhering to the

patient medication regimen. As the DNP student, I completed the practicum course required clinical hours at the local primary care clinic where the patient medication education project was implemented. I played a major role in the patient medication project through developing and distributing information to the HCP on providing appropriate patient education through the patient medication education sheet. I compiled the information provided by the HCP at the local primary care clinic for purposes of identifying the significance of appropriate patient medication education for patients at the clinic site who have heart disease or who are at risk for heart disease. My role as the DNP student was to identify possible barriers for the patients from the information provided by the HCP from the EHR relating to the patients' ability to adhere to the prescribed medication regimen and provide resources and education to HCPs regarding the need to ensure patients have a full understanding of the medication regimen. According to Jimmy and Jose (2011), barriers may include the inability to read and understand instructions; provider to patient communication; and a lack of knowledge about the use of the medication, patients do not believe they are in need of the medication, and cost and access to the medications. Barriers identified with the project were patient's inability to understand instructions, a lack of knowledge regarding medication use, and cost of the medications. I also engaged in the promotion of appropriate patient education to increase the likelihood of patient medication adherence and compliance. According to Jimmy and Jose (2011), healthcare professionals such as physicians, pharmacists, and nurses play a substantial role in improving patient medication adherence in the daily routine of patient care. Finally, I compiled the results of information provided by the HCP from the EHR to determine the possible reasons for patient noncompliant behaviors with the prescribed medication regimen. In response to the information gained from the patients' EHR, an educational program was developed at the local clinical site to ensure patients who are at risk for

heart disease, and who are noncompliant receive the appropriate intervention and patient education from the HCP and clinicians. I presented the educational program to the HCPs, nurse practitioner students, and clinicians at the local clinic site and compiled a list of free or reduced cost medications and compiled a resource guide for the clinic site which may be distributed to patients who cite finances as a reason for noncompliance with the medication regimen.

My motivation for addressing the issue of patient medication education was partly personal because my father lacked appropriate patient medication education and never possessed a clear understanding regarding his health and the medications used for treatment. The remaining reason was to empower patients who were identified by the HCP at the local primary care clinic to take ownership of their health and well-being because too often patients presented to the primary care clinic and possessed little to no knowledge of their medications and the reason for the medications. Patients have many barriers to why medications are not taken as prescribed and sometimes the patients are unsure of how to express their lack of knowledge of the medications being prescribed. I am unaware of any biases that I have at the present time. There is a passion for the patient medication education project to advocate for patients found in my clinical practice who have often not understood their medications or what the medications are prescribed for, even for the patients who are both compliant as well as those who are noncompliant. To narrow the project, the patients with cardiovascular disease were chosen for this patient medication education project.

### **Summary**

A lack of appropriate patient education by HCPs and clinicians that is needed to improve compliance with the prescribed medication regimen may be a major cause for increased CHD. Several articles found in the literature addressed patient education and how it relates to the



importance of providing quality patient education regarding medication adherence and overall health outcomes (Jimmy & Jose, 2011; Kelly et al., 2014; Marshall et al., 2015). According to Kale and Pottle (2013), healthcare professionals need to work with patients in making them aware of the importance of taking medications as prescribed and making healthy lifestyle changes as an essential component of treatment, and to make the patient aware that this treatment is lifelong to achieve the best outcome.

In Section 3, I will address the approach and methods of the patient education project. Section 3 also provides a detailed description of the implementation and evaluation plan for the DNP project.

## Section 3: Collection and Analysis of Evidence

### Introduction

Medication compliance is a major challenge in medicine today, and about half of the patients with chronic disease are noncompliant with the prescribed medication regimen driving up the cost of care (Zullig & Bosworth, 2017). The issue with medication noncompliance is the responsibility of the HCPs, nurses, and the healthcare organizations. The entire team has a role in ensuring patients understand the treatment plan and a major portion of the plan is the prescribed medications. When the cardiovascular patients take their medications as prescribed they have an increased chance of preventing an illness from worsening. According to the *Morbidity and Mortality Weekly Report* (CDC, 2013), nearly one-fourth of all deaths caused by CHD are preventable.

My observations as a nurse in the intensive care and emergency nursing clinical and educational setting for over 20 years provided a foundation for this patient education project. During this time, various patients have stated things to the effect of “I don’t know why I’m taking the medicine; the doctor just said I needed it.” The problem of noncompliance with the prescribed medication regimen has been identified at the local primary care clinic site via conversations with patients seeking care from the HCP. Patients constantly verbally reveal a variety of reasons for noncompliance with the prescribed medication regimen. The purpose of this patient medication education project was to provide education to HCPs and staff for medication use and safety for cardiovascular patients in a local primary care clinic. Another purpose of creating this patient medication education project was to provide HCPs and clinicians with methods to deliver proper medication education to patients, to determine the preferred education methods of patients receiving medication education, and to explore the reasons for

noncompliance to the prescribed medication regimen in patients with heart disease or those at risk for developing heart disease. The problem identified for this DNP project was medication noncompliance with the currently prescribed medication regimen by patients who are being identified at the clinic site. The JBSM; (Johnson, 1968; Parker & Smith, 2010; Reynolds & Cormack, 1991) guided the discussion in this section regarding how the model effects change in the behavior of the patients to increase medication compliance to the prescribed regimen. This section addressed the review of the literature, DNP project design, planning and interventions, and assumptions and limitations of the project.

### **Practice-Focused Question**

This patient medication education project provides an evaluation of current healthcare practices regarding medication administration and education. The following question was answered:

What are the precipitating factors leading to adult patients' noncompliance with the prescribed medication regimen and how can HCPs and clinicians provide useful patient medication education to overcome those factors?

### **Definitions of Terms**

The key terms in this project have been given the following operational definitions.

*Adherence*: The act of doing what is required (Merriam-Webster, 2015).

*Cardiovascular disease*: Any disease of the heart and blood vessels, including atherosclerosis, cardiomyopathy, coronary artery disease, peripheral vascular disease, and others (“*Cardiovascular disease*,” 2009).

*Compliance*: The act or process of doing what one has been asked or ordered to do: the act or process of obeying (Merriam-Webster, 2015).

*Education:* The process of teaching someone (Merriam-Webster, 2015).

*Prescribed:* To officially tell someone to use a medicine, therapy, diet, and so forth as a remedy or treatment (Merriam-Webster, 2015).

*Regimen:* A systematic plan (as of diet, therapy, or medication) especially when designed to improve and maintain the health of a patient (Merriam-Webster, 2015)

### **Literature Search Strategy**

The use of the Cumulative Index of Nursing and Allied Health (CINAHL), Ovid, and Medline within the nursing databases were used through the Walden and Auburn Universities' websites to retrieve peer-reviewed articles for this medication education project. Only scholarly articles with dates occurring within the past 5 years were selected, except for information relating to JBSM that was used to guide the study. *Dorothy Johnson's health model, chronic heart disease, heart disease, healthcare costs, patient education, patient medication education, healthcare outcomes, medication compliance, adherence, and medication nonadherence* were key words used for the literature search.

### **Project Design and Participants**

The purpose of this patient medication education project was to provide education to HCPs and staff for medication use and safety for cardiovascular patients in a local primary care clinic. Another purpose of creating this patient medication education project was to provide HCPs and clinicians with methods to deliver proper medication education to patients, to determine the preferred education methods of patients receiving medication education, and to explore the reasons for noncompliance to the prescribed medication regimen in patients with heart disease or those at risk for developing heart disease. The medication education project was conducted on patient information provided by the HCP from the electronic database of a rural

area primary care clinic led by a nurse practitioner and a collaborating physician. Information regarding the patient illnesses and any currently prescribed medications had been entered into the EHR by the HCP during the clinic visits. Patient information was selected by the HCP from the clinical site EHR database based on those identified as age 18 and older; male and female; and having received a diagnosis and a treatment regimen for hypertension, diabetes mellitus 2, obesity, hypercholesterolemia, stroke, or current cardiovascular disease with the exclusion of congenital heart disease. The stated disorders were included because they are risk factors for heart disease or an actual diagnosis of heart disease. Congenital heart disease was excluded from the study because the study addresses heart disease or risks for heart disease for the adult patient. The medication education project consisted of data from the EHR based on patient diagnosis, age, educational level, insurance or self-pay status, and prescribed medications. After data was received from the HCP, the patient information was compiled according to percentage of patients with heart disease, age, number of prescribed and over the counter medications, patient's educational level, and whether the patient is insured or uninsured.

A descriptive correlational quantitative research design was used for the DNP project to assess the information found in the EHR regarding patients who were at risk for being noncompliant with medications prescribed by the HCP. By conducting the review of the information found in the EHR by the HCP, several avenues such as possible financial abilities to afford the medications, patients' educational level, and age of patient were explored as to possible reasons for noncompliance of the prescribed medication regimen to provide future resources to promote compliance to improve health and reduce the cost of healthcare.

Adult patients were identified from the EHR at the primary care clinic based on the diagnosis of heart disease and heart disease-related illnesses. Information regarding the patient

education project was submitted to the Institutional Review Board (IRB) at Walden University for review and approval prior to implementation of the project to ensure all ethical standards follow the Walden University IRB standards. The project site does not currently have an IRB process in place. Verbal and written permission was granted from the primary care clinical site. An IRB approval was obtained from Walden University prior to using any information from the primary care clinic site. After approval was received, information was received from the HCP via convenience sampling from patients located in the EHR at the local primary care clinic site.

All patient information was kept confidential via the EHR and the computer at the clinic site with a locked file requiring a username and password to enter the computerized system. All data were entered into SPSS statistics 21 software for analysis. The SPSS statistics 21 software was used to analyze the data and information was coded for themes such as age, educational levels, income and access to medications, insured or self-pay, and the number of medications taken.

The information gathered from the EHR by the HCP allowed me to explore the reasons for noncompliance to the prescribed medication regimen in patients with heart disease or those at risk for developing heart disease through the age of the patient, number of medications, diagnoses, level of education, access to medications, and whether the patient was insured. According to Shah et al. (2013), medication noncompliance in geriatric patients is significantly associated with socioeconomic status, number of medications prescribed, and instructions regarding medication use provided by the physicians. The number of illnesses for the patient was used for the DNP project because as stated by Corser and Donje (2011), self-management of health illnesses in patients with multiple illnesses is rarely achieved by the patient. I did not find educational levels or access to medications from the review of the EHR.

## **Planning and Interventions**

Evidence-based research can be used to assist the HCP with the best available evidence regarding disease maintenance and prevention. According to Mortenius, Hildingh, and Fridlund (2016), most evidence-based research has been conducted in a hospital setting rather than the primary care settings. The medication education project aimed to assist the HCP with this latest evidence-based research on the importance of providing appropriate education to patients in the primary care clinic setting when prescribing medications for the treatment of CHD and various other health conditions. However, there are other factors to consider, such as the outside environment affecting the patients' current behaviors, when attempting to provide quality patient education. According to Elwell, Povey, Grogan, Allen, and Prestwich (2013), many factors are involved in patients' understanding of the necessary lifestyle behavior changes. I identified the JSBM (Parker & Smith, 2010) as the framework of this project and used it to discuss these environmental influences that may affect the ability for the patient to be compliant with the currently prescribed medication regimen.

Education regarding the medication education project and how it was conducted as well as the purpose of the medication education project was shared with the HCPs who are responsible for prescribing and administering any medications at the primary care clinic site. I developed the patient education handout for the patients, as well as education project for the HCPs, so it has never been used before. The healthcare staff was provided education on the importance of providing patients with proper education and ensuring that patients can understand the information being presented. Each participant in the education session received a copy of the educational material(s) (see Appendix A) during the educational session. The total estimated time for completion of the sessions was 1 hour with inclusion of time allowed for questions.

It must be considered by the HCP that an additional portion of the patient education process is to gain an understanding of the patients' health beliefs and the patients' actions surrounding those beliefs. The JBSM (Reynolds & Cormack, 1991) has subsets which suggests that patients may have several factors that influence their ability to be compliant with the prescribed medication regimen. These include the ability to obtain the necessary resources, the ability to develop a trusted relationship and communicate with the HCP, the ability to accept external assistance from others, the feeling of being threatened by the environment, the ability to master self to follow the prescribed regimen, and the ability to recover from the effects of the environment from which the influence was received. The DNP medication education project used patient information provided by the HCP at the local primary care clinic from the EHR to gather information relating to the subsets of the JBSM (Reynolds & Cormack, 1991).

The patient information was obtained from the HCP to gain information regarding the percentage of patients with a diagnosis of heart disease and the management of their disease with medication use. The information was then used to provide evidence of the need for patient education in a meaningful way to ensure patients are following the prescribed medication regimen. Only patients meeting the criteria for the medication education project were included in the patient medication project.

### **Assumptions and Limitations**

According to Merriam-Webster (2017), an assumption is the act of taking possession of something and assuming it is true. Assumptions to the DNP medication education project were that at least a third of the patients have cardiac disease requiring a prescribed medication regimen. Another assumption was that the patient information found in the EHR would lead to



better provision of patient education by the HCPs and clinicians, which would lead to increased compliance with the prescribed medication regimen.

According to Merriam-Webster (2017), limitations are defined as the act of controlling the amount or extent of something. A limitation means to hold back or control what a person can do. Limitations to the DNP medication education project were considered that there would be a fewer than planned number of patients with heart disease at the local clinic site. However, this was not a limitation at all. Secondly, the inability to follow up with patients after education is a barrier to determining the long-term impact of patient medication education and compliance when patients do not return for follow-up appointments at the primary care clinic site. Thirdly, the population was limited to a small sample area where patients share certain common traits, such as low educational levels and socioeconomic status, and the data may not be transferrable to other settings. Fourthly, the project did not use the patients' history of smoking as a risk for cardiac disease even though several patients who were included in the project had a history of smoking listed in the EHR.

### **Summary**

The patient medication education project will promote appropriate patient education regarding the prescribed medications to improve health outcomes. Although most practitioners provide adequate education for their patients, education was provided to the clinicians and practitioners regarding specific points to consider regarding the need for appropriate patient medication education. Additional education was also provided regarding the prescribed medications as well as the need to consider environmental factors that may contribute to the patients' noncompliance to the medication regimen. The patients and their families as stakeholders need to be included in the education process to increase adherence to the prescribed

medication regimen when noncompliance is an issue. The patient education project will improve patient health outcomes through properly providing patient education for currently prescribed medications as well as any newly prescribed medications even if the medications are prescribed for the treatment of temporary illnesses, such as an infection. The overall goal of the project was to improve health outcomes while also decreasing healthcare costs.

Section 4 will summarize the findings of the project, provide the evaluation of the project, as well as the plan for the implications of the project.

## Section 4: Findings and Recommendations

### **Introduction**

Noncompliance with medication regimens, especially among cardiovascular patients, is as high as 50%-80% (Aghabekyan et al., 2012). There may be several reasons why patients are noncompliant with the prescribed medication regimen. Whatever the cause, there are risks as severe as death when patients do not adhere to the recommended medication regimen. To increase patient compliance, appropriate education regarding the medication use and side effects, as well as the treatment regimen for all prescribed medications should be provided to every patient, and the HCP should also include the families in the education of the medication regimen when warranted. The purpose of this patient medication education project was to provide education to HCPs and staff for medication use and safety for cardiovascular patients in a local primary care clinic. Another purpose of creating this patient medication education project was to provide HCPs and clinicians with methods to deliver proper medication education to patients, to determine the preferred education methods of patients receiving medication education, and to explore the reasons for noncompliance to the prescribed medication regimen in patients with heart disease or those at risk for developing heart disease.

### **Practice-Focused Question**

This patient medication education project provided an evaluation of current healthcare practices regarding medication administration and education. The following question was answered:

What are the precipitating factors leading to adult patients' noncompliance with the prescribed medication regimen and how can HCPs and clinicians provide useful patient medication education to overcome those factors?

### **Summary of Source of Evidence**

Information provided by the HCP regarding information in the patient's EHR was used from a local primary care clinic site to determine that there is a major need for patient education in cardiovascular patients. The number of patients meeting the inclusion criteria for the DNP patient education medication project was significant. The charts were reviewed by the HCP for diagnosis, age, number of medications listed in the medication record, educational level, type of insurance, and income and access to medications. The patients with a diagnosis for hypertension, diabetes mellitus 2, obesity, hypercholesteremia, stroke, or current cardiovascular disease with the exclusion of congenital heart disease were used in the project as evidence for heart disease or risk for heart disease. The findings were coded using SPSS statistics 21 software using the themes of age, number of medications, whether the patient was insured, access to medications, and a diagnosis of heart disease or risk for heart disease. The HCP states that no educational levels, incomes, or access to medications were noted in the EHR.

### **Findings and Implications**

The patient information was used to gain information regarding the percentage of patients with a diagnosis of heart disease and the management of their disease with medication use. The information was then used to provide evidence of the need for patient education in a meaningful way to ensure patients are following the prescribed medication regimen. After compiling the results of the medication education project, the need for patient medication education was shared with the HCP at the local clinic site as well as nurse practitioner students who were invited to the presentation of the patient medication project.

There were a total number of 200 patient charts randomly selected by the HCP from the EHR at the local primary care practice clinic. Of the charts selected, 87 of these charts had a

diagnosis of hypertension, diabetes mellitus 2, obesity, hypercholesteremia, stroke, or current cardiovascular disease with the exclusion of congenital heart disease. The mean age was 57.39 from this group. The mean number of medications was five, most had at least 1 to 3 of the inclusion criteria diagnoses, and all were insured with the exception of four patients. Most of the diagnoses included either hypertension, diabetes type II, or obesity either alone or in combination of two or more of the inclusion diagnoses.

The purpose of this patient medication education project was to provide education to HCPs and staff for medication use and safety for cardiovascular patients in a local primary care clinic. Another purpose of creating this patient medication education project was to provide HCPs and clinicians with methods to deliver proper medication education to patients, to determine the preferred education methods of patients receiving medication education, and to explore the reasons for noncompliance to the prescribed medication regimen in patients with heart disease or those at risk for developing heart disease. The education may also be used for other chronic and acute illnesses. There were two limitations to the patient medication project, and they were the lack of level of education and the lack of access to medications not being provided by the HCP as evidence found in the EHR.

The patient medication project established a patient education delivery model for future use in the management of acute and chronic illnesses. Establishing a patient education delivery model for the HCP and patient in which the patients and their families have access to healthcare information regarding diseases and treatment in a meaningful way in a language that is easily understood increases the patients' likelihood of adherence (Hacihasanoglu & Gozum, 2011). The patient medication education sheet (Appendix A) provides pertinent information in a simple language that may be easily understood by the patient. The patient medication sheet empowers

the patient with the ability to connect the medication with the illness as well as understand key factors about the medication, its' side effects, and when to contact the physician. The use of the medication education sheet by the clinicians and HCPs decreases the likelihood of patients misunderstanding the reason for the prescribed medication. These changes in the methods of how health care professionals educate the patients on their medications may lead to increased compliance with the prescribed medication regimen and lower overall healthcare costs.

### **Strength and Limitations of the DNP Project**

The strengths of the patient medication project included addressing a vital need for continued and further patient medication education based on patients' information from the EHR, and led to an engagement of HCPs at the local primary care clinic to improve patient outcomes. The implementation of the patient medication sheet was well received although some expressed concerns about the additional workload during busy clinic times. There are several copies currently being used at the local primary care clinic site, and the electronic copy has been shared with the local primary care clinic site, other clinic sites, as well as distributed among the nurse practitioner students currently studying at the local site. The patient medication sheet may be translated into a variety of languages to address not only chronic health problems and medication compliance, but also to provide education regarding discharge teaching in the hospital settings with medication use and lab values, such as the use of insulin and warfarin.

Limitations of the patient medication project were the omission of the current smoking history of the patient and the inability to include the educational level of the patient and access to medications because they were not listed in the patient's EHR. The HCP states that there is no way to determine from the EHR if the patient is taking the medication as prescribed or has access to obtaining the medication. As a researcher, I could only assume that if patients are insured,

there is an ability to obtain the medication(s). Other limitations of the DNP medication education project were that the randomly selected number of patients from the EHR does not represent the whole of the given number of patients seen at the local primary care clinic site. Additionally, the inability to follow up with patients after education is a barrier to determining the long-term impact of patient medication education and compliance when patients do not return for follow-up appointments at the primary care clinic site. Finally, the educational presentation was limited to a small number of HCPs and nurse practitioner students, and there is a chance that the information may not be widely shared by the participants of the presentation.

### **Recommendations for Future Projects**

Future practice guidelines may be incorporated into the local primary care practice clinic regarding the patient medication education procedures. The implementation of the patient medication education sheet is valuable in providing patient information in easy to understand language and a meaningful way. According to the Institute of Medicine (2001), patient care should be safe, effective, and patient-centered. Providing patient medication education leads to the safe, effective, and patient-centered care as the project focused on individual patient medication education.

To improve the patient medication education project, it is vital that the patient medication information sheets be translated into other languages for patients who do not use English as their primary language. Translation into other languages ensures that it is easily understood by a variety of patients as well as those beyond the local primary care clinic.

## Summary

This scholarly project focused on an improvement process to develop a patient medication protocol through the patient medication sheet for patients at a local primary care clinic. The key stakeholders in this scholarly project were identified as the HCPs who are mainly responsible for prescribing the medications at the local primary care clinic and the patients who were receiving the patient medication education. The HCPs and nurse practitioner students were actively engaged with this quality improvement patient medication education process during the presentation of the power point slides (Appendix B) followed by the question and answer session. Overall the patient medication project sheet was well received with positive responses, and the project was easily adapted at the local primary care clinic site.

In Section 5, the dissemination plan and an analysis of the DNP student as the role of the practitioner will be further discussed.



## Section 5: Dissemination Plan

### **Dissemination of DNP Patient Medication Education Project**

An educational session via a brief 15-slide Power Point presentation was developed and shared with the HCPs and nurse practitioner students at the local primary care clinic as well as other clinic sites to increase awareness of the need for improved patient medication education to increase compliance with the prescribed patient medication regimen. Specific instructions and copies of the patient medication education sheet were also discussed and reviewed during the presentation regarding the HCP's role in the medication education improvement process. Proper use of the patient medication education sheet with consistency was stressed throughout the presentation. The HCPs and nurse practitioner students were encouraged to explore reasons for noncompliance as well as learning methods for teaching the patients and their families. The providers were made aware during the educational presentation that other or additional information can be easily adapted to the patient medication education sheet to make it institution and patient specific for future use.

The goal of the educational presentation focused on increased awareness of the implications and necessity of proper patient education by HCPs and nurses for improvement in the method of patient medication education and decreasing poor health outcomes. The appropriate audience for the patient medication education project would be HCPs in clinics and inpatient settings, as well as nurses caring for patients in the acute care settings for discharge patient medication education purposes. In addition, the information will be shared in healthcare journals such as *MedSurg Nursing* and *The Journal for Nurse Practitioners* as well as national conferences to include the Academy of Medical Surgical Nurses (AMSN) for nurses, and the American Association of Nurse Practitioners (AANP) for nurse practitioners.

### **Analysis of Self**

The patient medication project has broadened my knowledge of the role of the nurse and HCP in providing safe, efficient, quality healthcare to the patients we serve. I have also discovered through the work of the DNP project the importance of viewing patients from all angles to determine the basis for which the patient is noncompliant with the prescribed medication regimen. I am excited to have made such a difference at the local primary clinic site as the DNP patient medication education project was well received. As the nurse and researcher of the patient medication education project, it is vital that I advocate for change in the way health care professionals serve the patient and to view them as a vital stakeholder and intricate participant in their health care. I have gained a profound amount of knowledge on the cost of healthcare and how the healthcare issue regarding medication noncompliance has affected the economy of the United States and globally. It is because of the knowledge that I can advocate for medication and healthcare management for patients. The knowledge gained from the DNP patient medication education project sparked a desire in me to know my local politicians and raise my voice. In doing so, I will be traveling to Washington, DC for a meeting with my senators and representative at a roundtable to discuss these healthcare issues that I feel are important to me.

There were many challenges such as time for researching and writing of the DNP project, but perseverance and determination were the keys to completion. Throughout the researching, writing, much editing, and implementation of this project, I have become more passionate about dissemination of the findings and creating a positive change, not only for advocacy for patient medication education and improved outcomes, but for the nursing profession on policies and implementing changes at the local, state, and national level for patient policies affecting change

surrounding healthcare insurance and various healthcare needs. I believe an educated and informed patient is a powerful patient as it relates to management of their health. This project has increased my passion and desire for change regarding the healthcare system and how patient care is delivered. I am grateful to have had the chance to create such positive change locally, and I look forward to making changes globally.

### **Summary**

Quality improvement involves a continuous process of actions by the HCPs and clinicians to improve healthcare which may lead to an increase in favorable healthcare outcomes. This DNP project focused on improving the delivery of patient medication education. The lack of patient medication education and noncompliance with their medications was identified as the healthcare problem and gap in practice. The project involved a local primary care clinic and focused on patients with cardiovascular disease for implementation of the patient medication education project. Information provided by the HCP from an electronic health database for adult patients with cardiovascular disease or who had a diagnosis of risk factors for cardiovascular disease were used for the project. Findings from the project showed that 44% of the randomly selected patients by the HCP from the EHR at the local primary care clinic site had been diagnosed with cardiovascular disease or had major risk factors leading to cardiovascular disease. Providing patient medication education to this population is vital to increase the quality of care and improve patient outcomes while also lowering healthcare costs. This project also corresponds with the DNP Essentials II *promoting organizational and systems leadership for quality improvement and systems thinking* (AACN, 2006). The development of a patient medication education sheet is the first step in providing quality improvement in patient care at the local level. The project also included an educational Power Point presentation (see Appendix

B) for the HCP's awareness of the patient medication education sheet and to implement the patient medication education sheet for use at the primary care clinic. This DNP project has supplied HCPs with an improved method of patient medication education procedure to improve patient outcomes and aid in lowering health care costs.

## References

- Adams, R. J. (2010). Improving health outcomes with better patient understanding and education. *Risk Management and Healthcare Policy*, 3, 61-72. doi: 10.2147/RMHP.S7500
- Aghabekyan, S., Thompson, M. E., & Abrahamyan, L. (2012). Medication noncompliance and patient satisfaction following percutaneous coronary intervention. *Journal of Interventional Cardiology*, 25(5), 469-475.
- American Association of Colleges of Nursing. (2006). *The essentials of doctoral education for advanced nursing practice*. Retrieved from <http://www.aacn.nche.edu/publications/position/DNPEssentials.pdf>
- Arnetz, J. E. & Zhdanova, L. (2014). Patient involvement climate: Views and behaviours among registered nurses in myocardial infarction care. *Journal of Clinical Nursing*, 24, 475-485. doi: 10.1111/jocn.12629
- Bergh, A., Johansson, I., Persson, E., Karlsson, J., & Friberg, F. (2015). Nurses' patient education questionnaire – development and validation process. *Journal of Research in Nursing*, 20(3), 181-200. doi: 10.1177/1744987114531583
- Blevins, S. (2015). Teaching patients with hearing loss. *MedSurg Nursing*, 24(2), 128-129.
- Cardiovascular disease. (2009). *Taber's cyclopedic medical dictionary* (21<sup>st</sup> ed.). Philadelphia, PA: F. A. Davis Company
- Catalan, N. G., Jackson, D., & Greenberg, P. B. (2014). Patient-centered care for diabetic retinopathy: A nursing initiative for patient education. *Journal of the American Society of Ophthalmic Registered Nurses*, pp. 15-17.
- Centers for Disease Control and Prevention. (2013). Vital signs: Avoidable deaths from heart disease, stroke, and hypertensive disease-United States, 2001-2010. *Morbidity & Mortality Weekly Report*, 62(35), 721-727.
- Centers for Disease Control and Prevention. (2015). Know the facts about heart disease. Retrieved from [www.cdc.gov/dhds/data\\_statistics/fact\\_sheets/fs\\_heart\\_disease.htm](http://www.cdc.gov/dhds/data_statistics/fact_sheets/fs_heart_disease.htm)

- Centers for Disease Control and Prevention. (2016). Heart disease facts. Retrieved from [https://www.cdc.gov/dhdsp/data\\_statistics/fact\\_sheets/fs\\_heart\\_disease.htm](https://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_heart_disease.htm)
- Chick, K., Negley, K., Sievers, B., & Tammel, K. (2012). Enhancing patient education through clinical nurse specialist collaboration. *Clinical nurse Specialist*, 317-321. doi: 10.1097/NUR.0b013e31826e3f12
- Comlossy, M. (2013). Chronic disease prevention and management. *National Conference of State Legislatures*, pp. 1-16. Retrieved from <http://www.ncsl.org/documents>
- Corser, W. & Dontje, K. (2011). Self management perspectives of heavily comorbid primary care adults. *Professional Case Management*, 16(1), 6-15.
- Elwell, L., Povey, R., Grogan, S., Allen, C., & Prestwich, A. (2013). Patients' and practitioners' views on health behavior change: A qualitative study. *Psychology & Health*, 28(6), 653-674. doi.org/10.1080/08870446.2012.744008
- Eskridge, M. S. (2010). Hypertension and chronic kidney disease: The role of lifestyle modification and medication management. *Nephrology Nursing Journal*, 37(1), 55-60.
- Friedman, A. J., Cosby, R., Boyko, S., Hatton-Bauer, J., & Turnbull, G. (2011). Effective teaching strategies and methods of delivery for patient education: A systematic review and practice guideline recommendations. *Journal of Cancer Education*, 26, 12-21.
- Hacihasanoglu, R. & Gozum, S. (2011). The effect of patient education and home monitoring on medication compliance, hypertension management, healthy lifestyle behaviours and BMI in a primary health care setting. *Journal of Clinical Nursing*, 20, 692-705. doi: 10.1111/j.1365-2702.2010.03534.x
- Hussein, M., Waters, T. M., Chang, C. F., Bailey, J. E., Brown, L. M., & Solomon, D. K. (2016). Impact of Medicare part D on racial disparities in adherence to cardiovascular medications among the elderly. *Medical Care research and Review*, 73(4), 410-436. doi: 10.1177/1077558715615297

- Institute of Medicine. (2001). *Crossing the quality chasm: A new health system for the 21st century*. Retrieved from <http://iom.nationalacademies.org/~media/Files/Report%20Files/2001/Crossing-the-Quality-Chasm/Quality%20Chasm%202001%20%20report%20brief.pdf>
- Jimmy, B. & Jose, J. (2011). Patient medication adherence: Measures in daily practice. *Oman Medical Journal*, 26(3), 155-159. doi: 10.5001/omj.2011.38
- Johnson, D. E. (1968). Oral Presentation, *One conceptual model of nursing*. Vanderbilt University: Nashville, TN
- Kale, V. & Pottle, A. (2013). Lowering cholesterol naturally alongside prescribed medication. *Nurse Prescribing*, 11(12), 609-614.
- Kelly, M., McCarthy, S., & Sahm, L. J. (2014). Knowledge, attitudes and beliefs of patients and carers regarding medication adherence: A review of qualitative literature. *European Journal Clinical Pharmacology*, 70, 1423-1431. DOI 10.1007/s00228-014-1761-3
- Lehnbom, E. C., Raban, M. Z., Walter, S. R., Richardson, K., & Westbrook, J. I. (2014). Do electronic discharge summaries contain more complete medication information? A retrospective analysis of paper versus electronic discharge summaries. *Health Information Management Journal*, 43(3), 4-12. doi: 10.12826/18333575.2014.0009
- Long, D. M., & Matthews, E. (2016). Evidence-based practice knowledge and perfusionists' clinical behavior. *Perfusion*, 31(2), 119-124. doi: 10.1177/0267659115589400
- Marshall, L. C., Dall'Oglio, I., Davis, D., Verret, G., & Jones, T. (2015). Nurses as educators within health systems. *Reflections on Nursing Leadership*, 41(4) 1-17.
- Merriam-Webster's Collegiate Dictionary*, (2015). Retrieved from <http://merriam-webster.com>
- Merriam-Webster's Collegiate Dictionary*, (2017). Retrieved from <http://merriam-webster.com>

- Minkin, A., Snider-Meyer, J., Olson, D., Gresser, S., Smith, H., & Kier, F. J. (2014). Effectiveness of a motivational interviewing intervention on medication compliance. *Home Health Nurse, 32*(8), 490-496.
- Mortenius, H., Hildingh, C., & Fridlund, B. (2016). Strategic communication intervention to stimulate interest in research and evidence-based practice: A 12-year follow-up study with registered nurses. *Worldviews on Evidence-based Nursing, 13*(1), 42-49.
- Parker, M. E., & Smith, M. C. (2010). *Nursing theories & nursing practice* (3<sup>rd</sup> ed.). Philadelphia, PA: F.A. Davis Company
- Reynolds, W. & Cormack, D. F. (1991). An evaluation of the Johnson behavioral system model of nursing. *Journal of Advanced Nursing, 16*, 1122-1130.
- Ross, A., Ohlsson, U., Blomberg, K., & Gustafsson, M. (2014). Evaluation of an intervention to individualise patient education at a nurse-led heart failure clinic: A mixed-method study. *Journal of Clinical Nursing, 24*, 1594-1602. doi: 10.1111/jocn.12760
- Safford, M. M. (2017). Improving medication adherence in the Alabama black belt. *Patient-Centered Research Institute*, Retrieved from <http://www.pcori.org/research>
- Salas, C. M. & Miyares, M. A. (2015). Implementing a pharmacy resident run transition of care service for heart failure patients: Effects on readmission rates. *American Journal of Health-System Pharmacy Residents, 72*, S43-S47.
- Send, A. F. J., Schwab, M., Gauss, A., Rudofsky, G., Haefeli, W. E., & Seidling, H. M. (2014). Pilot study to assess the influence of an enhanced medication plan on patient knowledge at hospital discharge. *European Journal of Clinical Pharmacology and Prescription, 70*, 1243-1250.
- Shah, R. B., Desai, S. V., Gajjar, B. M., & Shah, A. M. (2013). Factors responsible for noncompliance to drug therapy in the elderly and the impact of education on improving compliance. *Drugs & Therapy Perspectives, 29*, 360-366.



- Shiovitz, T. M., Bain, E. E., McCann, D. J., Skolnick, P., Laughren, T., Hanina, A., & Burch, D. (2016). Mitigating the effects of nonadherence in clinical trials. *The Journal of Clinical Pharmacology*, 56(9), 1151-1164. doi: 10.1002/jcph.689
- Tamura-Lis, W. (2013). Teach-back for quality education and patient safety. *Urologic Nursing*, 33(6), 267-271, 298. doi:10.7257/1053-816X.2013.33.6.267
- Valentino, T. (2016). Medication non-adherence sends healthcare costs soaring. *Behavioral Healthcare*, 49-51.
- Van Houtum, L., Rijken, M., & Groenewegen, P. (2015). Do everyday problems of people with chronic illness interfere with their disease management? *BMC Public Health*, 15(1000), 1-9. doi: 10.1186/s12889-015-2303-3
- Vaughan, A. S., Quick, H., Pathak, E. B., Kramer, M. R., & Casper, M. (2015). Disparities in temporal and geographic patterns of declining heart disease mortality by race and sex in the United States, 1973–2010. *Journal of the American Heart Association*, 4(12), 1-11.
- Whitman, M. (2015). Patient education: What worries the patient most? *Nursing 2015*, 52-54.
- Zullig, L. L., & Bosworth, H. (2017). Engaging patients to optimize medication adherence. *New England Journal of Medicine Catalyst*, Retrieved from: <https://catalyst.nejm.org/optimize-patients-medication-adherence/>

# Appendix A

## Patient Medication Sheet



Name of Patient \_\_\_\_\_

Health  
Problem/Illness \_\_\_\_\_

Medication Prescribed for this Health Illness \_\_\_\_\_

What this Medication Does and How it Will Help You with Your Health Problem \_\_\_\_\_

- ❖ \_\_\_\_\_
- ❖ \_\_\_\_\_
- ❖ \_\_\_\_\_

What are the Side Effects I need to Know \_\_\_\_\_

- ❖ \_\_\_\_\_
- ❖ \_\_\_\_\_
- ❖ \_\_\_\_\_

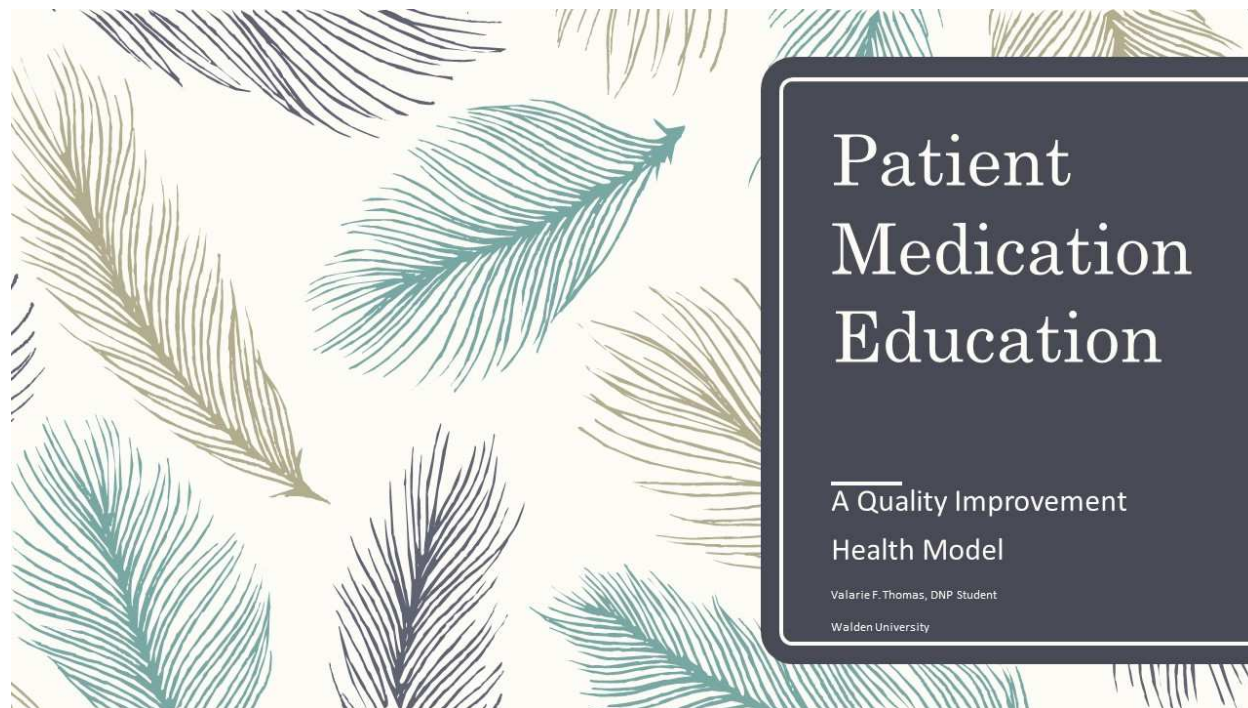
When Should I Call My Doctor: \_\_\_\_\_


- ❖ \_\_\_\_\_
- ❖ \_\_\_\_\_
- ❖ \_\_\_\_\_

Do you have any questions about the medication(s)? Please write them down on the lines below and talk with your doctor about your questions.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

Appendix B Patient Education Power Point Slides





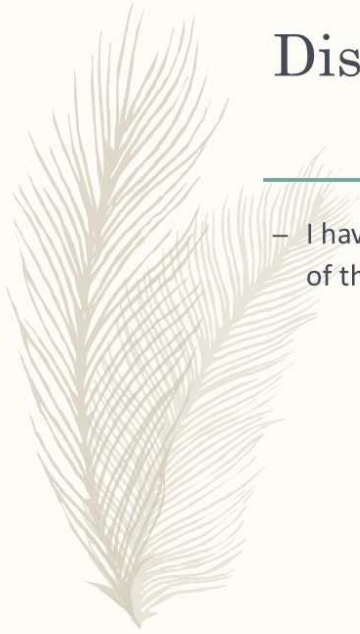
## Why This Medication Education Project

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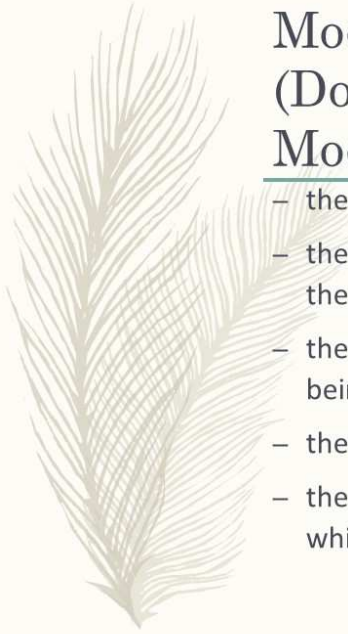
- To increase awareness among healthcare providers regarding the importance of patient medication education
- to increase compliance with the prescribed medication regimen
- to provide tools for healthcare providers as a guide for patient medication education
- to increase patient health outcomes and to lower healthcare costs

## Disclosures

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- I have no disclosures and the work of this project is the sole work of the DNP student as the presenter



## Model for Patient Medication Project (Dorothy Johnson's Health Belief Model)

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- the ability to obtain the necessary resources
- the ability to develop a trusted relationship and communicate with the healthcare provider
- the ability to accept external assistance from others, the feeling of being threatened by the environment
- the ability to master self to follow the prescribed regimen
- the ability to recover from the effects of the environment from which the influence was received

(Reynolds & Cormack, 1991)



## Why Patient Education is Important

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- Healthcare costs are estimated at \$1.3 trillion annually
- \$277 billion is used for the treatment of chronic illnesses
- \$1 trillion is lost productivity in the workplace
- The lack of medication compliance costs \$337 billion annually (Valentino, 2016)



## Why Patient Education is Important (Cont).

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- As many as 50% of patients in developed countries like the U.S. who are chronically ill do not take their medications as prescribed (Safford, 2017)
- Heart disease is the leading cause of death with greater than 600,000 deaths annually in the United States (Vaughan et al., 2015)

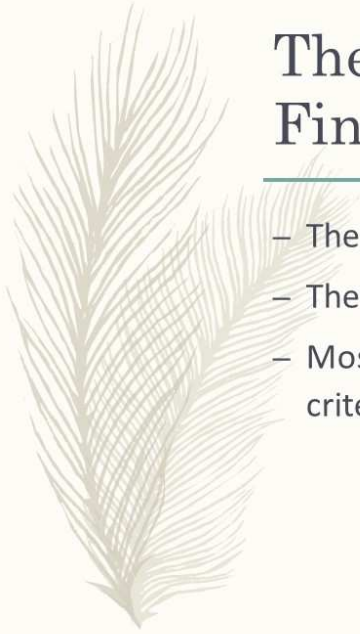




## The Local Primary Clinic Findings

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- 200 charts were randomly selected from the electronic health records
- The criteria included a diagnosis of hypertension, diabetes mellitus 2, obesity, hypercholesteremia, stroke, or current cardiovascular disease with the exclusion of congenital heart disease.
- 87 of those selected met the criteria of a diagnosis of heart disease or was at risk for heart disease



## The Local Primary Care Clinic Findings (Cont).

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- The age ranged from 19-90 with a mean age of 57.39
- The mean number of medications taken was five
- Most patients had from 1-3 diagnosis that met the criteria



## Important Key Elements about Patient Education

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- Education should be verbal, demonstrative, and written
- Education should be patient centered
- Education should be meaningful and specific to each individual patient
- Education should be an effective method of communication between the healthcare provider and the patient
- Education should be a dialogue that also occurs at the time of patient seeking care

(Friedman et al., 2011)



## Reasons for Noncompliance

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- Costs of prescriptions
- Age of the patient
- Physical ability to take medications as prescribed
- Socioeconomic status
- Side effects of the medication
- Poorly provided instructions regarding use
- Cultural Variations

(Hussein et al., 2013)

A decorative illustration of a feather, rendered in a light, sketchy style, positioned on the left side of the slide. It has a central rachis with numerous barbs extending outwards, creating a fan-like shape.

## Questions to Ask the Patient

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- Do you have money or insurance to purchase your medications?
- Who helps you with taking your medications?
- Do you understand why or the need for taking your medications properly?
- Do you understand all of your medications and how to take them?
- Do you understand the side effects of the medications you are taking?



## How You Can Help Bring Positive Change

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- Provide adequate patient education using the medication education sheets which have been provided for you
- Teach the medications based on the medical problem
- Ask your patients to teach back
- Allow your patient to ask at least these three main questions



## Three Main Questions for Patients to Ask the Healthcare Provider

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- What is wrong with me or what is the health problem?
- What do I need to do to as the patient?
- Why do I need to do this as the patient?

# References



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- Friedman, A. J., Cosby, R., Boyko, S., Hatton-Bauer, J., & Turnbull, G. (2011). Effectiveteaching strategies and methods of delivery for patient education: A systematic review and practice guideline recommendations. *Journal of Cancer Education, 26*, 12-21.
  - Hussein, M., Waters, T. M., Chang, C. F., Bailey, J. E., Brown, L. M., & Solomon, D. K. (2016). Impact of Medicare part D on racial disparities in adherence to cardiovascular medications among the elderly. *Medical Care research and Review, 73*(4), 410-436. doi: 10.1177/1077558715615297
  - Reynolds, W. & Cormack, D. F. (1991). An evaluation of the Johnson behavioral system model of nursing. *Journal of Advanced Nursing, 16*, 1122-1130.
  - Valentino, T. (2016). Medication non-adherence sends healthcare costs soaring. *Behavioral Healthcare, 49*-51.
  - Vaughan, A. S., Quick, H., Pathak, E. B., Kramer, M. R., & Casper, M. (2015). Disparities in temporal and geographic patterns of declining heart disease mortality by race and sex in the United States, 1973–2010. *Journal of the American Heart Association, 4*(12), 1-11.



# Questions

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