The Impact of a Nurse Navigation Program on Patient Engagement

Submitted by

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Abstract

Patient engagement and nurse navigation are constructs that have been independently studied and contribute to improved patient management and care outcomes. Coordinated and patient-centered care are central to patient engagement and nurse navigation. This Direct Practice Improvement project determined whether implementation of a nurse navigation program increased levels of patient engagement in a veteran population. This project used a quantitative methodology and descriptive pre-test post-test design in a non-randomized sample of 36 patients receiving care in orthopedic, medical services, and cardiology units. The Patient Health Engagement Scale was used to measure patient engagement at the start and termination of patient navigation services or at six weeks of navigation. Through analysis using the Wilcoxon Signed-Rank test, this study demonstrated that nurse navigation influenced a statistically significant increase in patient engagement from pre-test to post-test (p = .001). Findings of this project can be utilized to guide models of care that include patient navigation and measurement of patient engagement in addition to being a foundation for additional study. Generalizability could be limited due to the unique population and care environment utilized in this project. The pre-test post-test design allows data to be utilized to establish changes over time; however, it does not allow the evaluation of causation because participants were not randomly assigned.

Keywords: Patient Engagement, Engagement, Patient Navigation, Nurse Navigation, Patient-Centered Care, and Care Coordination.

Dedication

This Direct Practice Improvement project is dedicated to my son, Joel André, who has always been my primary cheerleader and the impetus for my educational pursuits, as well as to my granddaughters, Marli and Macy, who never failed to leave notes of love and encouragement on my desk and other surprising places, and to Madilyn who quietly encouraged me. To Kelly who went the extra mile to support and encourage my efforts and organize a serenade that got me through comprehensives and consequently to this point. To my husband, Bobby, who quietly supported me from the sidelines throughout this endeavor. More importantly, to my mother, Iris, who always advocated for the highest level of education that her children and others could achieve: rest in eternal peace, Mom. You, my family, got me through this rewarding endeavor. May God bless you all.

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Chapter 1: Introduction to the Project

Patient navigation conducted by nurse navigators draws on principles that allow patient-centeredness, care coordination, and the removal of barriers to care that can foster patient engagement. Improving patient engagement through the availability of support that includes patient-centered care, care coordination, education, shared decision-making, and partnership in the healthcare delivery process is an important precursor to the delivery of quality patient care (Barello, Graffigna, & Vegni, 2012). The purpose of this Direct Practice Improvement (DPI) project was to measure the impact of the implementation of a Nurse Navigation Program on patient engagement**,** a precursor to quality patient care outcomes. Executing this DPI through examination of current literature, data collection, and data analysis allowed a determination of the impact of nurse navigation on patient engagement that could influence health care outcomes.

This DPI project was conducted at an out-patient Veterans Health Administration (VHA) facility located in a far northwestern city in Texas using a quantitative methodology and a pre-test post-test design with a validated instrument. A convenience sample selected from a patient population that receives care in a total of three clinics orthopedic, medical specialties, and cardiology services was utilized in this project. This project serves to inform and educate the healthcare facility and the field of nursing and health care regarding the relevance of a nurse navigation program (NNP) to patient engagement in the context of a VHA ambulatory care environment. A review of literature presents evidence of the independent impacts of patient engagement and nurse navigation on myriad patient populations. Studies are evident in rehabilitative settings (Turner-Stokes, Rose, Ashford, & Singer, 2015), primary care environments (Wolff, Clayman, Rabins, Cook, & Roter, 2015), and in oncology care (Pedersen, Hack, McClement, &

Taylor Brown, 2014). An evaluation of the impact of nurse navigation on patient engagement in an ambulatory VHA facility or in the VHA system is not evident in current literature, revealing a gap in the knowledge related to this project's focus and indicating further explanation of the construct.

This project addresses the problem that it is not known if or what organizational factors or processes contribute to the facility's inability to achieve quality indicator outcome scores at or above system-programmed benchmarks. The facility experiences challenges to achieving acceptable measures in access to care, ambulatory care sensitive condition hospitalizations, patient satisfaction with providers, and clinical outcome measures on the Strategic Analytics for Improvement and Learning (SAIL) Value Model, a tool used to evaluate and benchmark quality and efficiency in the VHA system. There is a consensual perception on the part of the facility's leadership that patients are not actively engaged in or participating in management of their care processes. This chapter outlines the scope of this DPI project. Areas to be discussed include the background of this project, the clinical questions, the benefit to the facility and the health care field, the rationale for the methodology and design utilized, definitions of terms, assumptions, limitations, delimitations, and a summary and organization of the project.

Background of the Project

This DPI project was selected because the healthcare facility has experienced scores below system benchmarks on the SAIL surveys conducted and reported by the National Center for Veterans Analysis and Statistics. The SAIL model includes 25 quality measures that evaluate and benchmark quality and efficiency within the VHA system (Department of Veterans Affairs [DVA], 2017a). The SAIL measures of quality are derived from VHA program office measures and national databases for in- and outpatient care. The SAIL data are utilized to benchmark quality and efficiency across the VHA system in order to program strategic approaches that allow the delivery of quality care to Veterans. Patient-focused initiatives and processes have not measurably improved results of organizational benchmarks set forth by the VHA. The following measures are relevant to this project:

- Patient-experience scores include ratings of primary and specialty care providers and a comprehensive score derived from Agency for Healthcare Research and Quality (AHRQ)-sponsored surveys. Patient-experience scores focus on multiple care measures that capture health care quality from the patient's perspective. The patient's overall rating of primary and specialty care providers is reported on a 0 to 10 scale where higher scores are preferred for this measure.
- Access to care measures address the patient's perspective of experiences with obtaining timely appointments. The access measures reported for this project include timeliness of appointments, care, and information in primary and specialty care. Scoring is based on the patient's responses to those elements of care on a four-point scale from never to always; higher scores are preferred for this measure.
- Outpatient performance measures, or Healthcare Effectiveness Data and Information Set (HEDIS) measures, are an aggregate of scores in five composite care domains: behavioral health screening, diabetes, ischemic heart disease, prevention, and tobacco. Scores on this measure allow comparison to regional and nationally benchmarked scores. The HEDIS scores of individual

domains contribute to the total score equally because of the importance to quality of care. Higher scores are preferred for this measure.

- Ambulatory care sensitive condition hospitalizations are within the Care Transition domain of the SAIL survey and measures the number of hospital admissions per 1000 patients for specific disease states such as hypertension and pneumonia. These conditions are considered preventable and are dependent on the timely and effective provision of ambulatory care. This measure is an accepted measure of the quality of care and access to care. Lower scores are preferred for this measure (DVA, 2017b).

Benchmarks are the VHA's reference against which facility performance is evaluated and are stated as references at the 10th, 50th, or 90th percentiles. The SAIL reports referenced indicate that the facility experienced challenges in meeting established benchmarks in the stated measures during the first through fourth quarters of 2016 (DVA, 2017a). Other measures in the SAIL data such as new specialty and primary care appointments have yielded more positive results and contribute to the evaluation of access to care at the facility. Achieving benchmarks or demonstrating improvement on SAIL measures is one method for evaluating the quality and efficiency of patient care rendered within the facility. In utilizing SAIL data as a quality and efficiency indicator, the facility can employ strategies and processes to improve quality of care outcomes. The SAIL data are used to benchmark quality and efficiency across the VHA system in order to program strategic approaches that allow the delivery of quality care to veterans. Achieving benchmarks or demonstrating improvement on SAIL measures may evaluate the quality and efficiency of patient care rendered within the VHA system.

Determining the strategic focus of the facility relies on evaluative data such as the SAIL data reported quarterly. On a facility level, SAIL data are used to target areas that need to be addressed for continued facility performance and performance improvement initiatives. Ambulatory Care Sensitive Condition hospitalizations—measured as hospitalizations per 1000 patients—have a benchmark or standard reference that the hospital is compared to: 20.628; this facility's score is 51.174. The rating of primary care providers, specialty care providers and comprehensiveness of care benchmarks are 76.619, 72.722, and 65.717 respectively; however, this facility's scores are 60.874, 58.479, and 58.935 respectively. Timely appointments, care, and information in primary care has a benchmark of 59.947; the facility's score is 35.672. Likewise, the same measure for specialty care is benchmarked at 57.608 and the facility's score is 42.255. Outpatient performance measures—also referenced as HED90 measures—are benchmarked at 89.183 with the facility's score at 85.715. These scores are reported for the fourth quarter of 2016; however, quarterly cycles of surveys for fiscal year 2016 show that benchmarks have not been met for the measures of concern stated. Existing patient-focused initiatives have not yielded appreciable change as evidenced by the reported SAIL data (DVA, 2017a). The leadership of this facility elected to implement a NNP as one initiative to address the quality of care and improve the delivery of patient care to Veterans.

Problem Statement

It is not known if or what organizational factors or processes are contributing to the facility's inability to achieve quality indicator outcome scores at or above programmed benchmarks. The facility experiences challenges in achieving acceptable measures in access to care, ambulatory care-sensitive condition hospitalizations, patient satisfaction with providers, and clinical outcomes measures as evidence by the SAIL data. There is a consensual perception among leadership that patients are not actively engaged in their care processes.

This DPI project can address the stated problem through support of the implementation of the NNP and measurement of patient engagement. Support for the NNP includes informing the facility’s nurse navigation framework, content, processes, scope, and execution in concert with the Harold P. Freeman Model for Patient Navigation (HPF-MPN) and principles of the Harold P. Freeman Patient Navigation Institute [HPF-PNI] (HPF-PNI, 2017). Measurement of patient engagement pre- and post-implementation of the NNP can inform the facility regarding the efficacy of a NNP in increasing patient engagement. Measurement and analyses will give the organization the ability to address perceived low patient engagement by structuring nurse navigation processes to address patient care needs on an individualized basis. Individualized patient care includes patient-centered and coordinated care and includes the patient as a partner with the goal of improved care outcomes (Freeman, 2017; Graffigna & Barello, 2016).

Graffigna, Barello, Bonanomi, and Lozza (2015) posited that measuring patient engagement with a validated instrument provides the opportunity for care providers to tailor care interventions and evaluate for changes to levels of patient engagement post-intervention. Information related to patient levels of engagement can serve to inform decisions that affect NNP processes and improve patient engagement and care outcomes. Measuring patient engagement levels can also support and build on the development of pathways for care delivery that involve personalized care planning and the use of patient engagement assessments through the Patient Health Engagement scale (PHE-s).

The participating VHA facility serves approximately 35,000 beneficiaries who reside in the geographic region of a far northwestern Texas, USA, city and surrounding counties. The project sample comprised beneficiaries who receive care in the orthopedic, medical specialties, and cardiology service areas of the facility and were referred for navigation. The decision to implement the NNP in the named care locations was the sole decision of the facility's leadership in conjunction with physician staff members. The selection was made based on the mix of service areas and the complex nature of the services provided. The project sample was a convenience, self-selected group of navigated patients who elected to voluntarily participate.

Purpose of the Project

The purpose of this quantitative DPI project was to measure and describe the impact of the implementation of a nurse navigation program on patient engagement**,** a precursor to quality patient care outcomes. Measuring patient engagement pre- and post-implementation of a NNP required the use of a quantitative methodology and one group pre-test post-test design. The project's independent variable was defined as the implementation of a NNP. Support for implementation was based on the HPF-MPN and the Harold P. Freeman principles of patient navigation (Freeman 2012, 2013). Preparation for this support role included completion of the Patient Navigation Certification Training Program offered through the Harold P. Freeman Patient Navigation Institute in New York City, New York. Implementation was facilitated by the provision of a framework for the NNP, outlining and supporting decision making for the scope of processes in concert with the nurse navigators and the facility's leadership. One-on-one briefings were conducted with nurse navigators and physician champions and a briefing was provided to the facility's nursing population. Relevant literature related to patient navigation and nurse navigation was also distributed to all staff involved with the implementation and execution of the program.

The dependent variable was the level of patient engagement as measured by the PHE-s (Graffigna & Barello, 2015). The PHE-s is a five-item, ordinal level of measurement Likert scale questionnaire that measures patient engagement on a continuum. Engagement is measured along the illness trajectory in an evolutionary pattern or four phases: blackout, arousal, adhesion, and eudaimonic project (Graffigna et al., 2015). The PHE-s offers health care professionals the ability to assess a patient's global attitude towards their health. Appropriate implementation of the NNP and measurement of patient engagement using the PHE-s was essential to answering the project's question.

This project seeks to inform and educate the healthcare facility and the profession of nursing and other health care specialties regarding the relevance of an NNP to patient engagement in the context of an ambulatory care environment that serves unique and medically complex patients. To date, this writer has not identified literature related to nurse navigation and engagement in the VHA environment; hence, there is a gap in knowledge related to the focus of this project. In a broader sense, if more than one facility's leadership conducts such a project, it may inform the system relative to common issues within the system, specifically, issues that may be impeding engagement and are negatively influencing quality, care outcomes, and system benchmarks.

Clinical Question

One question guided this quantitative descriptive pre-test post-test project: in patients at a Veterans Administration outpatient facility, how does a nurse navigation program, compared to before the implementation of the nurse navigation program, increase patient engagement as measured by the PHE-s over a period of six weeks? The variables for the question are (a) the independent variable is the implementation of a nurse navigation program, and (b) the dependent variable is the level of patient engagement as measured by the PHE-s.

The facility's leadership reported that they have myriad empirically and organizationally sound policies, processes, and practices in place to support patient care delivery in a manner that should be conducive to optimal clinical outcomes as measured by system survey instruments such as the SAIL. Due to failure to achieve benchmarks, the facility's leadership determined that a change to care delivery processes should be made, the change is the implementation of the NNP. Mechanisms and processes have been employed to improve patient engagement in care processes; however, desired results are not evident. Patient engagement has not been specifically or explicitly measured in the context of this project.

In answering the project's question, this investigator intended that the identification of levels of engagement as measured by the PHE-s will inform the use of nurse navigator functions that address individual patient needs to facilitate patient engagement and resultant improvement in care outcomes. The outcome of this project is the determination of improved patient engagement as evidenced by demonstrably increased scores and progression on the engagement continuum via post-implementation scores on the PHE-s.

Advancing Scientific Knowledge

To advance scientific knowledge, this project identified gaps in knowledge related to how an NNP could increase patient engagement in the context of an ambulatory setting that serves a Veteran beneficiary population with complex care needs. There is a dearth of information and inquiry related to the impact of an NNP or other navigation program on patient engagement as one construct. This project serves as an explanatory inquiry to the subject of patient navigation and patient engagement in the context of this project. Findings of this project could inform further projects or research that will advance the study of how patient engagement can be facilitated through nurse navigation in varied care settings and patient populations. This project informs nurse navigation processes at the stated VHA facility to improve patient engagement, generate initiatives towards patient care goals, and aid the implementation of interventions that enable the improved delivery of patient care and patient care outcomes.

The theoretical framework for this project is the Patient Health Engagement Model [PHE-model] (Graffigna & Barello, 2015; Graffigna, Barello, Siederhold, Bosio, & Riva, 2013) and the Harold P. Freeman Model for Patient Navigation [HPF-MPN] (Freeman, 2012, 2017). Graffigna and Barello (2015) posited that patient engagement is a multi-dimensional experience that derives from individuals' conjoint cognitive, emotional, and conative expression towards their health management. The PHE model has four progressive phases: blackout, arousal, adhesion, and eudaimonic project. The Patient Navigation Program is designed to remove barriers to care across care domains through patient-centered care delivery models and care coordination over disease trajectories; it is guided by the HPF-MPN.

Using the framework of the HPF-MPN and the principles of patient navigation to establish the framework, the processes, level of nursing experience required, and the scope of services required for the NNP served to implement the program. Measuring and interpreting the levels of patient engagement was dependent on the successful implementation of the NNP. The fit of nurse navigation processes with the requirements of successful patient engagement that include care coordination, appropriate plans of care, and patient-centered care allowed for conducting the inquiry that could answer the project question. Findings of this project will serve as the initial evidence of the use of patient engagement and nurse navigation as one construct in a unique population and health care setting. To further address the gap in knowledge, findings can inform further projects or research that will further the study of how patient engagement can be facilitated through nurse navigation.

Significance of the Project

This DPI project contributes to the current literature because, although both patient engagement and patient navigation by nurse navigators have been studied, they have not been studied as a related construct in an outpatient VHA facility. In providing information of a relationship between patient engagement and nurse navigation in this VHA outpatient facility, this project adds to and fits with contemporary research. Because this is the initial inquiry of patient engagement and nurse navigation in a VHA facility, this project adds value to the facility, the health care system, and the field of nursing. As a small component of the vast VHA system and an out-patient care environment, a project in this care location will serve to inform similar and larger facilities within the VHA system and possibly be replicated or expanded within and beyond the system to civilian health care facilities. The most tangible contribution of this project would be to the patients or veteran community who would benefit from an improved model of care and improved care outcomes.

Graffigna and Barello (2015) posited that true engagement or the final phase of engagement denotes the ability of the individual to re-establish goals that include health management and active participation in the process. In addition, it involves the ability to reassess approaches to life in the face of a health issue. Tzeng, Yin, and Fitzgerald (2014) posited that paternalism in health care is a barrier to the concept of patient engagement that could be ameliorated by ensuring a two-way responsibility that requires joint participation between patients and health care professionals. Tzeng et al. (2014) emphasized the value of engagement in relation to safety and quality of care; thus, patients who are active in their care experience improved outcomes. The benefit of engaging patients also includes the implementation of processes, programs, and policies that address their needs and facilitate improved outcomes (Tzeng et al., 2014). Benefits of engaging patients also include communication that facilitates patient-centered care and improved outcomes (Jenerette & Mayer, 2016). Sherman and Hilton (2014) also described patient engagement as a health care imperative that is vital due to evidence that engaged patients have better outcomes than those who are not engaged.

Patient navigation implicitly describes the concepts of patient engagement to include patient-centered care, care coordination, partnership with patients for goal setting, patient support, and improved outcomes. Specifically, navigation has been proven to improve rates of diagnosis, treatment, and survival in cancer patients (Freeman, 2013). Koester et al. (2014) posited that navigators who can identify and empathize with unique patient populations positively influence patient engagement. The literature demonstrates that patients who have experienced nurse navigation have fewer issues related to barriers to care, availability of individualized health information specific to an altered state of health and treatment, and improved satisfaction. More importantly, patients experience greater satisfaction with how their psychological needs were addressed (McMurray & Cooper, 2016; Moore & Rettig, 2014; Shejila, Pai, & Fernandes, 2015). In concert with the phases of the PHE-model, Rousseau et al. (2014) demonstrated the emotional component of navigation and underscored the necessity of a patient-navigator relationship in meeting the emotional needs of individuals, a precursor to phase four of the patient engagement journey.

Patient navigation principles match the skill level of a navigator with the needs of the patient. The project facility uses only registered nurses in the role of patient navigators due to the overall complexities of care and care delivery. This approach meets the intent of patient navigation principle number five: matching the navigator skill level to the care needs of the navigated patient (Freeman, 2013). This VHA program is unique in that this care model is used in multiple services rather than being specific to a diagnosis or disease state.

Based on the current literature that supports patient navigation and improved engagement as predictors of improved outcomes, findings of increased engagement based on the implementation of an NNP can potentially improve SAIL scores over time. Within the engagement spectrum, patients who have evolved to full engagement are knowledgeable about their health, have moved to a partnership with health care providers, and are amenable to self-management. Measures on the SAIL that are below the benchmark can be positively influenced by increased patient engagement. Positive results of this project will also provide baseline information from which the facility can expand the NNP based on areas of need or low SAIL scores.

Rationale for Methodology

This project uses a quantitative descriptive methodology to gather information that one may use to influence or improve processes, practices, patient engagement, and thereby care outcomes at the facility. The use of a one-group, pre-test post-test design is amenable to the appropriate selection of the quantitative methodology that guides this project. This methodology examines variables in a natural environment with a self-selected, voluntary, convenience sample from a population of registered beneficiaries.

Primarily, a quantitative method allows the collection of specific levels of measurement, such as nominal, ordinal, and interval scales and numeric data. This project uses an ordinal level of measurement. In addition, the use of specific statistical tests helps to draw conclusions about the relationship among project variables to inform the area of study (Connelly, 2014). Data were collected using a validated instrument in this project: the PHE-s. This validated and tested instrument supported data collection and analysis that answered the project’s question.

This project utilized ordinal levels of measurement in accordance with the stated independent and dependent variables. In this project, the methodology allowed this writer to operationalize the independent variable, the implementation of a nurse navigation program, and the dependent variable, the level of patient engagement as measured by the Patient Health Engagement Scale. This has been achieved through well-defined variables that are accompanied by levels of measurement appropriate for analyses which use the correct statistical tests to produce answers to project questions (Grove, Burns, & Gray, 2013). This quantitative method also supports the use of specific designs that support the analytic tests an investigator may conduct (Ingham-Broomfield, 2014). Answering the clinical question depends on identifying clearly stated variables, selecting appropriate instruments, and conducting requisite data analysis; this has been done for this project.

Nature of the Project Design

This project uses a one-group, pre-test post-test design, which included a baseline pre-test. In the context of this project, the pre-test is the administration of the PHE-s when patient navigation was initiated. The post-test was administered using the PHE-s at the predetermined time frame of six weeks or at the termination of navigation if prior to that time. This design allows for knowledge examination and possibly causality without the use of experimental controls. The pre-test post-test design allows the measurement of changes in levels of patient engagement over time post-intervention. Through appropriate analysis and consideration for limitations, change may be attributed to the intervention (Grove et al., 2013). The pre-test and post-tests are the measurements of the dependent variable: the level of patient engagement as measured by the PHE-s. The implementation of the NNP is the independent variable. This design is amenable to the instruments and levels of measurement used in the conduct of this project: the PHE-s. The PHE-s is a five-item survey that measures patient engagement. The questionnaire yields continuous measure ordinal data and measures patient engagement on four engagement positions: blackout, arousal, adhesion, and eudaimonic project (Graffigna et al., 2015).

This DPI project used a convenience sample of volunteer veterans registered for care at a VHA outpatient facility in a city in far northwest Texas. As the designated VHA facility for this geographic location, this outpatient facility serves an eligible veteran population that exceeds 35,000. These veterans were referred to nurse navigators by physicians to receive navigation services based on the determined needs of the patient. To measure the levels of patient engagement in the convenience sample of volunteer veterans, the PHE-s was used in data collection. Measurements were taken at the start of the patient’s navigation services provided by the nurse navigator and at six weeks or at the end of navigation if that occurred prior to six weeks.

Definition of Terms

The definition of terms aims to provide demarcations for terms and constructs which the reader may find unfamiliar or contextually unique; therefore, this section is provided to enhance understanding for the reader. Terms are defined operationally; this refers to how the writer has used the terms or how they are used within the context of the project. The list of terms follows.

Active participation. This includes independent decisions to be involved in formal and informal decision-making structures (Graham-Dickerson et al., 2013). In this context, this is participation in health care decision making.

Beneficiary. This entails a unique group of individuals who are entitled to care, their minor children, adult children incapable of self-support prior to reaching the age of eighteen, surviving husbands or wives, parents who are dependents, and some individuals who pay through insurance and are entitled to receive benefits in this healthcare system (Thian et al., 2013).

Complex patients. This represents patients in the beneficiary population who are experiencing multiple chronic illnesses that are physical, psychological, or emotional, and may also be experiencing psychosocial issues such as homelessness (Porter, 2015).

Eudaimonic. This focuses on meaning and self-awareness or self-realization and defines personal welfare in terms of the degree to which a person can be functional (Ryan & Deci, 2001).

Patient engagement. This entails the patient participating in his or her care and being full partners in care with the ability to maintain a focus on living life despite an altered health state. This is a state wherein care that is received is relevant to the patient and the circumstances being experienced (Graffigna & Barello, 2016).

Projectuality. Restoration of one’s sense of self-efficacy and purpose in living life in the face of adverse health conditions (Graffigna & Barello, 2016).

Quality. This represents the level to which services are provided to a patient population to experience health outcomes based on scientific evidence, which remains consistent with current professional knowledge and practice (AHRQ, 2016).

Assumptions, Limitations, Delimitations

The assumption of this project is that participants would:

- Provide answers that represent their actual experiences or feelings because no mandate to participate exists.

The limitations of this project are:

- This project used a convenience sample, which was not selected through randomization, thus limiting the generalizability of the findings.
- The geographic location of the project is culturally and geographically unique.
- The volunteers are from a veteran-only population.

The delimitations of this project are:

- The choice of the question of this project is generated by the need to inform a knowledge gap, address an organizational need, meet the interest of this writer, and contribute to the field of nursing.
- The project question is relevant to the problem of low SAIL scores in relation to a perception that patients are not engaged in their care.
- The project variables are designed to keep the project manageable and to elucidate information pertinent to the patient population.
- Existing research validates the selection of the theoretical framework.

Summary and Organization of the Remainder of the Project

Chapter 1 has outlined why this project is relevant at the project site and to the nursing profession; more importantly, this included what one may learn from the project to fill existing gaps in knowledge. The purpose of this DPI project is to measure and describe the impact of the implementation of an NNP on patient engagement**,** a precursor to quality patient care outcomes. With implementation of the NNP and appropriate measurement of patient engagement with a valid instrument, the PHE-s, results can be utilized to develop or sustain processes that improve patient care outcomes.

Patient engagement is essential to ensure patients' participation in their care and decision making and emotional capability to perform those activities (Graffigna & Barello, 2015). Engagement could lead to measurable improvements in the quality of care and the safety of patients (Tzeng et al., 2015). Patient navigation has been proven successful across the spectrum of cancer care and other disease states. Nurse navigators in the role of patient navigator have the skills to execute the role outlined by the principles of navigation (Freeman, 2013). Nurse navigators are best suited for all aspects of patient navigation, particularly with patients experiencing complex and chronic conditions (McMurray & Cooper, 2016). This DPI presents information regarding the influence of nurse navigation on patient engagement.

The implementation of an NNP that may remove barriers to care, coordinate care, bridge fragmented systems, and allow patient-centered care allowed nurse navigators to interact with navigated patients individually. Provision of services was based on identified patient needs. Key components of the navigation process included communication, removal of barriers to care, support, and education. Within the context of navigation, the patient is offered a main point of contact and source for information. The services mentioned were not available from a single source before the implementation of the program. The implementation of the NNP and the PHE-s facilitated measurement that answered the clinical question: among patients at a Veterans Administration outpatient facility, how does an individualized nurse navigation program, compared to before the implementation of the nurse navigation program, increase patient engagement as measured by the PHE-s over a period of six weeks? Answering the question contributes to the body of knowledge regarding patient engagement, nurse navigation, and measurement of the levels of improvement in engagement that support improved health outcomes. The methodology and design of this project ensured the availability of data amenable to statistical testing that yielded answers to the project's question.

The chapters that follow outline a comprehensive review of the literature, an in-depth discussion of the proposed methodology to include the plan for analysis, data analysis and results, and a summary and findings of this project. Chapter 2 provides a review of the literature with major themes of patient engagement and nurse navigation, and subthemes of patient self-management, patient-centered care, patient activation, care coordination, patient satisfaction, and patient care outcomes. Chapter 3: Methodology restates the purpose of the project and the clinical questions, the comprehensive methodology and design, sample selection, instruments, theoretical framework, and the plan for analysis. Chapter 4: Data Analysis and Results provides an explanation of the descriptive data, the analysis of data, and the results gleaned from the analysis. Chapter 5: Summary, Conclusions, and Recommendations provides a summary of the project, its findings and conclusions, and implications and recommendations associated with the project.

Chapter 2: Literature Review

The purpose of this DPI project was to measure and describe the impact of the implementation of an NNP on patient engagement**,** a precursor to quality patient care outcomes. The investigator sought to facilitate and support the successful implementation of an NNP and measure levels of patient engagement pre- and post-implementation. Identifying levels of patient engagement and changes to those levels is relevant to the focus of NNP processes and assurance that patient needs are being appropriately addressed.

Facilitating an intervention (specifically the NNP) and measuring patient engagement served to answer the project's question: among patients at a Veterans Administration outpatient facility, how does a nurse navigation program, compared to before the implementation of the nurse navigation program, increase patient engagement as measured by the Patient Health Engagement scale over a period of six weeks? In answering the stated question, two major themes were addressed: patient engagement, and nurse navigation. Subthemes of self-management, patient-centered care, patient activation, care coordination, patient satisfaction, and patient care outcomes were used to explain the relevance to this project.

The PHE-model (Graffigna et al., 2013), the HPF-MPN, and principles of patient navigation (Freeman, 2012) represent the theoretical framework for this project. The literature review for this project reflects searches from multiple databases, most conducted through databases supplied through Grand Canyon University's resources and Google Scholar. Answering the DPI project question required searches from search engines or databases, which included CINAHL, Medline, ProQuest, OVID, Cochrane

Library, and Google Scholar. Limits were set to English language, peer reviewed, and the years 2012 to present.

Articles or primary/seminal source documents, which are relevant but unavailable by the stated means, were purchased from proprietary sources, such as Amazon, or secured through interlibrary loans. Articles or sources more than five years old were required due to the usefulness and veracity of source information. Searches were periodically conducted to ensure the availability of the most current information and research on the project’s topic. Inclusion criteria were original scholarly literature that addressed patient engagement; patient empowerment; patient-centered care; patient self-management; patient activation; nurse navigation; patient navigation; patient and family satisfaction, and patient care outcomes. Selected articles were assessed to ensure that they met inclusion criteria as scholarly and empirical sources of information. Articles not meeting criteria were disqualified. Search terms are included in Table 1.

This project was selected because it was not known if or what organizational factors or processes contribute to the facility’s inability to achieve quality indicator outcome scores at or above programmed benchmarks. The facility experiences challenges to achieving acceptable measures in access to care, ambulatory care sensitive condition hospitalizations, patient satisfaction with providers, and clinical outcomes measures as indicated by the SAIL data. There is a consensual perception among the leadership that patients are not actively engaged in their care processes. An assessment of patient engagement as employed in this project had not been done at this organization, nor had a nurse navigation program been piloted. There is a perception that issues related to clinical outcomes are, in part, due to patient disengagement.

Table 1

Search Terms Used

Search Terms Used
Engagement: patient; and patient navigation; and nurse navigation; and patient activation
The Patient Health Engagement Model
The Patient Health Engagement Scale
Nurse navigation: and ambulatory care; and patient engagement; and models; and patient navigation
Care coordination: and patient engagement; and nurse navigation; and patient navigation
Patient centered care: and patient engagement; and nurse navigation; and patient navigation
Nurse navigation programs: and patient engagement; and the VHA
Patient activation: and ambulatory care; and nurse navigation; and patient engagement
Harold P. Freeman Model for Patient Navigation
Harold P. Freeman patient navigation principles
Models for patient navigation
Patient self-management: and patient engagement; and patient navigation; and nurse navigation
Patient satisfaction: and nurse navigation; and patient engagement; and patient navigation
Quantitative methodologies
Research design and methodology
Non-parametric tests
Reliability and validity
Pre-test post-test design and measurement
Access to care: and patient engagement; and patient navigation; and nurse navigation
Patient care outcomes: and patient engagement; and nurse navigation; and patient navigation

The health care industry and professionals are presently acknowledging that patient inclusion and involvement, otherwise described as engagement, in the decisions made regarding their health care are vitally important to improving and sustaining health care quality and safety. However, the concept of engagement has been broad, resulting in uncertainty across disciplines, settings, and even countries (Gallivan, Burns, Bellows, & Eigenseher, 2012). Hibbard and Greene (2013) alluded to this phenomenon by stating that patient engagement and patient activation are often used interchangeably, finding it necessary to define the two concepts. Patient engagement is described as a broader concept that includes activation. This project uses a definition consistent with contemporary work on patient engagement conducted by Graffigna et al. (2016). Graffigna et al. described patient engagement as “a process-like and multidimensional experience, resulting from the conjoint cognitive (think), emotional (feel) and conative (act) enactment of individuals towards their health management” (p. 215). This definition of engagement is consistent with the theoretical model, the PHE model used in executing this project.

Improving health care outcomes and risk reduction is a national and international priority and, in many instances, is a requirement in some countries. Patient engagement is currently viewed as a way of meeting the challenges of achieving the industry’s stated goals. The literature indicates that patients who are engaged have better outcomes than those who are not engaged (Barello et al., 2012; Barello et al., 2016; O’Day, Benadon, & Whelan, 2015; Tzeng et al., 2015). Nurse navigation can positively influence patient engagement in their care and yield improved outcomes (Freeman, 2012, 2017). To meet the priority of improving health care outcomes in the context of this project, it is important to define and measure patient engagement.

Preliminary research in patient engagement has been attributed to other researchers such as Dr. Judith Hibbard (Bottles, 2012), who has written extensively on patient activation and engagement, which is complementary to, but different from, engagement as defined by Graffigna et al. (2015). Contemporary research on defining and modeling the concept of patient health engagement used in this project has been attributed to Guendalina Graffigna and other investigators for over a decade, culminating with the PHE-model (Graffigna et al., 2013) and the PHE-s (Graffigna et al., 2015). The PHE-s offers health care professionals an assessment of patients’ overall attitude about their health and how it factors into their health management. Having this assessment allows for improved care planning. Measuring a patient's level of engagement would also enable care planning and evaluation of interventions. In the context of this DPI project, that would be applicable to the intervention of patient navigation by nurse navigators.

Graffigna and Barello (2016) asserted that discerning inquiry regarding existing models of care should move from simply an acute perspective to a consideration of models of care that accommodate longer-term health changes. Because of a shift in models of care, patients must be better informed and have the knowledge and skills needed to be motivated to actively participate with health care professionals in their health management. Employing patient navigation processes that remove barriers to care, provide patient education, enhance care coordination, and allow individualized care planning can facilitate improved engagement and self-management that is sustainable over health and disease states.

Patient navigation was born of the necessity to understand the difficulties of being poor and stricken with cancer. The American Cancer Society spearheaded hearings to address this issue. Findings indicated that the poor faced disproportionally challenging barriers to care, including financial concerns that resulted in an inability to seek care. The deeper socio-political level minimized cancer education and its relevance to the poor who endured more suffering than others in the United States. When care was finally sought, it was at extreme hardship to the cancer patient and his or her families. These findings lead to the evolution of patient navigation (Freeman, 2013).

To illustrate the validity of patient navigation, the U.S. government has provided significant funding for patient navigation research. Funding sources include the National Cancer Institute, the Centers for Medicare and Medicaid Services, the Center for Disease Control and the Health Resources and Services Administration (Freeman, 2012). The

American College of Surgeons Commission on Cancer mandates that organizations seeking its approval employ and demonstrate patient navigation as the standard of care. Further, the Affordable Care Act requires that all state health insurance exchanges institute navigator programs. Private or non-government agencies and organizations have vigorously supported patient navigation (Freeman, 2017).

Harold P. Freeman, a New York physician and surgical oncologist, conceptualized and coined the term *patient navigation*. His intent was to serve disadvantaged populations within a window of opportunity that would save lives. This opportunity lay in the time frame between a cancer finding and diagnosis and treatment. The initial focus was on women with breast cancer (Freeman, 2013; May et al., 2014; Van Walleghem, MacDonald, & Dean, 2011). Freeman initiated patient navigation to address the needs of poor and underserved individuals by addressing care fragmentation and discontinuities in services across disease trajectories. His lobbying efforts are the results we now realize across the health care spectrum (McMurray & Cooper, 2015). Patient navigation has evolved to programs across the cancer care continuum and other medical and surgical specialties such as cardiovascular disease, diabetes, HIV, and other disease conditions (Koester et al., 2014; May et al., 2014; Sales et al., 2013; Van Walleghem et al., 2011). This variety is reflective of the patient population of this project.

In the context of this DPI project, patient navigation through an NNP has been implemented in this VHA ambulatory facility in a unique geographic location to a population of beneficiaries with complex care needs. The NNP uses the principles of patient navigation as outlined by Freeman (2012). The adaptation of principles are outlined in Table 2.

Table 2

Principles of Patient Navigation

Principles of Patient Navigation	
Principle	Explanatory Project Description
1. Patient navigation is a patient-centric healthcare service delivery model.	Focused on promoting the timely movement of patients through complex healthcare systems.
2. Patient navigation serves to integrate a fragmented health care system for the individual patient.	Promotes a seamless transition through an often complex and fragmented care continuum
3. The core function of patient navigation is the elimination of barriers to timely care across the health care continuum.	This function is optimized by one-on-one relationship between the patient and the navigator.
4. Patient navigation should be defined with a clear scope that distinguishes the role and responsibilities of the navigator from that of other providers.	Navigators should be integrated into the health care team but have a specific role.
5. Delivery of patient navigation services should be cost-effective and proportionate to the training and skill necessary to navigate an individual through the care continuum.	Consideration should be given to the cost of delivering navigation services.
6. The determination of who should navigate should be based on the level of skill required at a given phase of navigation.	The needs of patient should be matched to the skill level of the navigator on levels from trained lay navigators to professional navigators such as nurses or social workers.
7. There is a need to define the points at which navigation begins and the point at which navigation ends.	There has to be start and end points to navigation that is dependent on the needs of the patient within the scope of navigation.
8. There is a need to navigate patients across disconnected systems of care.	Navigation systems connect disconnected systems.
9. Patient navigation systems require coordination or a champion who is responsible for overseeing navigation activities within a care site.	Differentiating between program of navigation and the navigators who work within the program is important.

The principles of patient navigation are used within the basic framework of the HPF-MPN. This DPI project facilitates and supports the design and implementation of a patient navigation program staffed with nurse navigators who are registered nurses. Nurses hired for this program do not have experience as nurse navigators but have extensive experience in clinical and administrative nursing. Patient navigation requires care delivery that is tailored to the needs of navigated patients; this includes identified social, clinical, and psychological/emotional needs. The PHE-model and PHE-s are well suited to the assessment and evaluation of the improvement in patient engagement outcomes based on nurse navigation.

Theoretical Foundations

Graffigna and Barello (2016) and Graffigna et al. (2013) noted that patient engagement is a multi-dimensional, dynamic, and psychosocial process derived from the conjoint cognitive, emotional, and behavioral enactment of patients towards their health. Engagement is viewed to be a process that includes the recapture of life’s focus or projectuality while managing the altered health state. Graffigna and Barello suggest that an individual who is fully engaged has evolved through a process of reframing his or her health status while advancing through a series of engagement phases, each phase being a higher level of success.

The patient health engagement model. Graffigna et al. (2015) posited that patient engagement is a multi-dimensional process that evolves from cognitive (think), emotional (feel), and conative (act) enactment of individuals towards their health management processes. This model has four progressive phases: blackout, arousal, adhesion, and eudaimonic project.

Blackout. Blackout is characterized as the first phase of the engagement journey wherein individuals may describe themselves as experiencing a diagnosis or health condition as distressing, unacceptable, and having a negative effect on their life trajectory. The patient may be in denial of the health state and unable to act. Patients may perceive an inability to manage their own health and may abdicate responsibility for their care to health care providers. Patients in this phase of engagement may need support in order to cope with the health threat or situation. There is a requirement for the provision of empathetic supportive care wherein a patient-provider relationship could be established (Graffigna & Barello, 2016).

***Arousal*.** Arousal, the second engagement phase, is a progression from blackout. It is characterized by an initial understanding of the health state; however, there is hypersensitivity to symptoms and preoccupation with the health state. Patients may be unable to effectively manage the requirements of addressing the health state due to a high state of anxiety and alarm. Individuals are more informed about their health states than in blackout; however, this may be a disjointed comprehension, and appropriate self-management is somewhat negated. Patients in the arousal phase may have a need to view a provider or health care professional as important to the management of their health experiences. Progression along the engagement continuum is dependent on the patient's ability to move towards behavioral organization. Successful establishment of a relationship with the health care provider facilitates better coping, thus allowing a transition to the third phase of engagement (Graffigna & Barello, 2016).

***Adhesion*.** Adhesion, the third engagement phase, is characterized by improved emotional functioning attributed to enhanced knowledge provided by the professionals involved. Patients are more accepting of their health state, and their ability to cope is enhanced; however, this state can be disrupted by changes. Individuals perceive that there is still a need to depend on health care professionals. Patients are not autonomous at this phase, and quality of life is dependent on interactions with health care professionals in the fulfillment of care requirements (Graffigna & Barello, 2016).

***Eudaimonic project*.** Eudaimonic project is the fourth phase of engagement wherein a patient reframes his or her perception of an illness state and achieves a sense of acceptance of his or her health state and perceives him- or herself to be a person rather than an ill body or a patient (Graffigna & Barello, 2016). At this phase, patients can participate in their healthcare in a meaningful manner. This includes the ability to gradually manage their own care and to recognize resources not generated by the health care team (Graffigna & Barello, 2016). This phase culminates the engagement process wherein the individual is engaged in the management of their health care and is in partnership with the health care professional. The individual in the fourth phase of engagement experiences a better quality of life, even in a diseased state.

Full engagement as the culmination of this process also includes the patient being educated on the altered health state in relation to the interventions to address it. This is optimally done along the continuum of the engagement journey based on the needs of the patient. One would additionally expect that the education would evoke new behaviors that are sustainable beyond an episode of illness (Bigi, 2016).

The benefit of conducting this DPI is to inform and educate the healthcare facility, the profession of nursing, and other health care specialties regarding the relevance of an NNP to patient engagement in the context of an ambulatory care environment that serves unique and medically complex patients. In demonstrating relationships between patient engagement as defined and nurse navigation in the context of this organization, valid and reliable findings may serve to inform the field regarding that measurement in an outpatient and unique facility and population. This will occur based on findings generated within the theoretical framework used. In addition, findings may inform further research that will further the study of how patient engagement can be facilitated through nurse navigation resulting from the use of appropriately designed, individually planned, patient navigation processes based on the patient’s level of engagement and specified needs.

The concept of patient engagement is evolving as a priority in health care; however, the concept has not been well defined nor has there been consensus on a common language to describe the concept. This lack of consensus related to terminology, goals for engagement, and responsibilities of health care professionals in facilitating successful engagement has been an impediment to the process (Gallivan et al., 2012). The PHE-Model addresses these impediments by providing a clear definition of patient engagement and descriptors of the patient’s thinking, acting, and feeling factors at each of four stages of engagement: blackout, arousal, adhesion, and eudaimonic project. Knowledge of levels of patient engagement allows care providers to plan care that is appropriate to the individual patient. Having a clear definition and measure of engagement can address this evolving priority.

Fostering patient engagement requires care coordination and appropriate plans of care based on, and appropriate for, the individual patient (Barello et al., 2012). Prevailing evidence shows the success of nurse navigation in predominantly oncology contexts; however, nurse navigation is evolving as a care model that is applicable in myriad care specialties and environments to include mental health, medical, surgical, neonatology, human immunodeficiency management, and chronic conditions (Ferrante et al., 2010; Kelly et al., 2015; Lippman et al., 2016; McMurray & Cooper, 2016).

Harold P. Freeman Model for Patient Navigation. This model has an expanded scope from the initial model that did not include outreach. The model now covers the entire continuum of care, encompassing prevention through the end of life. This model ameliorates the disconnect between the finding of a disease state and the timely and efficient delivery of care to address it (Freeman, 2012, 2017). The model is depicted in three phases: outreach, patient navigation (abnormal results, diagnosis, and treatment), and survivorship. The outreach phase is the period wherein screening and early detection are done; this phase ends with a normal or abnormal finding. If an abnormal finding, the second or navigation phase includes abnormal findings, diagnosis, and treatment, terminating with a resolution of the immediate health issue under treatment. The third and final phase of the model is survivorship wherein the post-treatment quality of life of the patient is addressed. The defining dividing lines between the three phases are the point at which there is an abnormal finding and the point at which there is a resolution that leads to post treatment quality of life. The model covers the care continuum (HPF-PNI, 2017). The HPF-MPN in practice employs the Nine Principles of Patient Navigation**.**

Harold P. Freeman patient navigation principles. The patient navigation program is designed to remove barriers to care across domains through a patient-centered care delivery model and care coordination over disease trajectories. The Nine Principles of Patient Navigation are a patient-centered care delivery model; elimination of barriers to care; integration of fragmented care systems; a defined role of the patient navigator that distinguishes the role from other professionals/providers; cost effectiveness; navigator skill level appropriate to the needs and phase of navigation; clearly defined start and termination points for navigation; connection of disconnected systems; and assignment of a navigator with responsibility for all phases of navigation (Freeman, 2012, 2013).

The characteristics of the patient and family and nurse navigation are incorporated and evident in the navigation intake process as well as the navigation functions and descriptors of nurse navigators within the principles of patient navigation as outlined by Freeman (2012, 2013). Within the context of this DPI project, the principles of patient navigation and the HPF-MPN, and the PHE Model are utilized to execute the project and analyze outcomes. Who should be navigated? Freeman (2015) suggests that everyone experiencing barriers to timely, quality care should be navigated. Evidence suggests that patient navigation is optimally effective when offered to patients who are most at risk of confronting substantial barriers to that care.

Although research on the value of nurse navigation exists, there is a dearth of research related to nurse navigation in relation to patient engagement. This project aims to contribute to the body of knowledge in this area. Using the model, theory, and navigation principles as the framework for this project, this investigator intends that the project question will be answered through adherence to the constructs and the extent to which these apply in the context of the organization and the unique population served. This framework serves as a frame of reference and guides review of relationships among the concepts to achieve an understanding of the project's variables. The independent variable is the implementation of a nurse navigation program. The dependent variable is the level of patient engagement as measured by the PHE-s.

Review of the Literature

Patient navigation programs utilizing Freeman's (2012) principles of patient navigation predominate in the health care literature across disciplines and care sites. Although patient navigation is an evolving field, fewer than three decades in the making, nurse navigators are improving the quality of care among cancer patients as well as other such as care of special population areas. Koester et al. (2014) described the benefit of patient navigation in a population of patients with HIV and extenuating circumstances of substance abuse and incarceration. Luckett, Pena, Vitonis, Bernstein, and Feldman (2015) described the use of patient navigation in reducing no-show rates at a referral colonoscopy clinic. Brown (2012) described the use of nurse navigators in diagnostic imaging wherein navigation provided coordination that allowed removal of barriers to care. Titling of navigation personnel is sometimes ambiguous, and roles, functions, and education levels are sometimes inconsistent across practice settings (McMullen et al., 2016). This does not negate the value of a structured navigation program that is consistent with the patient characteristics, nursing characteristics, and the Freeman principles of patient navigation.

The PHE-model has evolved in current years, emerging with a novel and comprehensive view of patient engagement. This model explains the subjective experiences that individuals in an altered state of health go through to achieve engagement as active participants in their health as well as factors that trigger progression on the engagement continuum. Graffigna et al. (2013) suggest that achieving fully engaged status is the culmination of a succession of emotional, cognitive, and behavioral reframing of a patient’s health condition. The path to full engagement is dependent on success at each phase on the engagement continuum: blackout, arousal, adhesion, and eudaimonic project (Graffigna et al., 2015).

Unlike patient navigation, the term *patient engagement* has been widely used but poorly conceptualized and ever-changing; therefore, the field has not had a comprehensive vision of the engagement phenomenon (Barello, Graffigna, Vegni, & Bosio, 2014). The PHE model addresses this by providing three dimensions of engagement: behavioral, what the patient does; cognitive, what the patient thinks and knows; and emotional, what the patient feels (Barello et al., 2013).

Nurse navigation. Nurse navigation and the delivery of patient navigation services have been studied predominantly in the context of cancer care due to the patient navigation model having its origins in oncology; however, this model of care has evolved across the health care continuum to include prevention through survival or resolution of disease states (Freeman, 2013). Patient navigation has transcended the United States health care system and is internationally recognized as a model that preserves quality of life and life. The Nine Principles of Patient Navigation, contextually applied, are germane to all care environments and patient types.

Nurse navigation is evolutionary as a nursing model of care, as navigation aligns with the philosophy of primary care in that nurses working in this environment must establish partnerships with patients, families, and their communities to provide access to the types and level of services needed to meet their needs (McMurray & Cooper, 2015). The nurse navigator must have the knowledge and skills relevant to the population served. In the context of this DPI project, a mix of complex patients with acute and chronic illnesses. The nurse navigator bridges the gap between all levels of care and systems. More importantly, the nurse navigator has the autonomy within the principles of navigation, the care environment, and the patient needs to design and plan the way to best serve the patient. This requires relationships with peers and all team members involved in care of the patient (McMurray, 2015; Moore & Rettig, 2014). The ways in which this role is exemplified are varied and dependent on the care environment and patient needs.

Pedersen, Hack, McClement and Taylor-Brown (2014) conducted a qualitative, grounded theory study using face-to-face interview techniques to explore patient experiences with the functions of nurse navigators. The purpose of the study was to clearly delineate the role of oncology patient navigators in the care of young breast cancer patients. Using a sample of twelve patients under the age of 50, the researchers found that care of this population required intervention that included education, consistent discourse, and emotional support throughout the care continuum, from diagnosis through resolution. In addition, the study underscored the perceived gaps in information and education and care fragmentation that activates emotional responses and distress during the care journey. Despite limitations that include sample size and retrospective bias, the authors illustrated that nursing can benefit the patient by interjecting coordinated follow-ups at crucial points in the care process to improve the services and meet the emotional needs of patients. This role is ideally suited for the nurse navigator with the educational, clinical, and adjunct psychologically based skills to address this population.

As with Pedersen et al. (2014), Basu et al. (2013) conducted a quantitative correlational quality assessment study with a sample of 175 patients diagnosed with breast cancer to evaluate the role of the nurse navigator as an outcome measure in patient care, specifically, in measuring the time from diagnosis to initial consultation. These investigators found that the nurse navigator program shortened time to consultation in patients over the age of 60; however, no differences were found in a younger age group. The researchers again cited sample size in addition to the difficulties of measuring outcomes in populations that have myriad and often divergent needs. Further exploration of the causes of delayed times in this population and the sub-population of minorities as opposed to non-minorities is needed.

Citing the lack of consistency in reporting outcomes of navigation programs, May, Woldhuis, Taylor, and McCahill (2014) conducted a study to formulate discussion of implementing the role of gastrointestinal nurse navigators. In this quantitative descriptive study, the investigators used a sample of 413 patients referred to a gastrointestinal program over a two-year period. The study utilized four metrics: time to nurse navigator contact; days to completion of cancer staging; days to first visit; and days to initiation of treatment. Metrics lay the foundation for the evaluation of the role and functions of the nurse navigator. The metrics served as a benchmark and tracking mechanism for the program as well as the criticality of having a qualified nurse navigator and a program.

May et al. (2014) studied the foundation of a nurse navigator program. Although several practice implications are noted—the importance of clinical knowledge, enhanced care coordination and quality care facilitation, and the use of metrics to appropriately measure nurse navigator contributions—the study is not without limitations. The lack of defined roles and training programs for this disease-specific nurse navigator and implementation of collateral programs clouded evaluation of nurse navigator impact. Baseline metrics were not available prior to program implementation. These findings are not novel due to the evolving role of the nurse navigator.

In exemplifying the evolving role of the nurse navigator, Brown (2012) described the implementation of a nurse navigator program for diagnostic imaging within a vast health care system. This descriptive study emphasized the need for care coordination to decrease stress and anxiety in patients being evaluated through anticipatory guidance and expert clinical knowledge of radiology. Validation of the nurse navigator program required demonstrated improved patient outcomes, positive patient feedback, evidence of barrier to care removal, and decreased workload on frontline staff members. More importantly, better-educated and less-apprehensive and -stressed patients can focus on their participation in shared decision making and active participation. Of note, although limitations are not explicit, implications for practice are. The nurse navigator position can facilitate process changes that identify and meet patient needs at higher levels.

Care coordination from diagnosis to stability is challenging when managing HIV care in disadvantaged populations, special or protected populations, or in countries with a high burden of this disease (Flickinger, Saha, Moore, & Beach, 2013; Koester et al., 2014; Lippman et al., 2016). In a South African study using a quantitative cluster randomized methodology and design with a population of 750 patients with HIV, researchers aimed to examine two strategies to facilitate continuity of care: targeted text messages and the use of peer navigators. The aim of this ongoing research is to explore differences between randomized groups and care continuity. Findings will support the efficacy of the two interventions in terms of resources, barrier removal, and continuity. Study with this patient population is evolving.

Koester et al. (2014) conducted a qualitative ethnographic study using a sample of 15 patients with HIV being discharged from incarceration with services of socially concordant navigators. The purpose of the study was to examine the mechanisms through which the patient navigation model of care improves health outcomes. The study revealed that patient navigators are suited for safe transitions to care and services for this special population of patients to break cycles of disengagement and to facilitate continued care. Further research is recommended to determine whether the navigation model will increase the number of patients who reach “optimal engagement” (Koester et al., 2014, p. 89). This is a rare association of patient engagement with patient navigation. There are, however, limitations to this study. Social impacts such as the salaries of navigators in consideration of social-welfare benefits, prevented the consistent use of the same navigator. In addition, this navigation model was not compared with others nor was a comparison with non-concordant navigators used.

Plant et al. (2013) conducted a single-blind randomized controlled trial using a sample of 400 chronically ill patients presenting for emergent care in a hospital environment. This study was conducted to measure the effect of care coordination performed by a navigation team of nurses for health care usage and quality of life of elderly patients. This study exemplified the benefits of a care coordination program wherein the intervention can rapidly identify patients at one access point and facilitate care that includes the general practitioner while placing the patient at the center of care and decision making. This is in concert with the principles of patient navigation. A key limitation of this study is the loss of follow-up and the heterogeneity of the patient population; however, the study informs the body of knowledge regarding care coordination in the study country and internationally.

Wang et al. (2015) conducted a quantitative evaluation of a patient navigator program with a sample of 215 patients with diabetes and/or hypertension in an ethnically and diverse care environment. Findings are significant: patient navigators may be significant in re-engaging patients in this complex population and facilitating care appointments. The emphasis of this study is the direct engagement with patients as a re-engagement strategy to improve care outcomes. One possible limitation to this study is the transient nature of the population which Wang et al. attributed to a high number of foreign-born individuals.

Johnson (2016) conducted a qualitative pilot study using a grounded theory methodology to define oncology nurse practitioner navigator processes that are applicable to any practice setting. Two navigators from inpatient care and one from outpatient care were recruited from suburban and community hospital settings. Processes identified included early involvement, acting in multi-functional roles, telephonic communications, patient-focused supportive processes, and patient tracking. All navigators concurred that care coordination that included attending care conferences, presenting patient-related information, and information gathering was a core process of navigation. Additional studies with a larger sample for further theme validation is recommended.

Rousseau et al. (2014) conducted a qualitative analysis to determine elements of navigation that promote patient involvement in treatment of two types of cancer. This study used a sample of 28 semi-structured interviews of patients who were navigated and those who were not navigated. Findings were that patient navigation reduced multiple patient needs; most importantly, the emotional and informational needs associated with a cancer diagnosis. The authors attributed the outcome to the development of a relationship with the navigators. Rousseau et al. alluded to the fact that little is known about effective interventions related to “cognitive dysfunction” in this patient population. This is a component of care that can be addressed through this DPI project. A reported limitation is a potential sampling bias, providers selectively referred patients that they perceived needed more help.

A review of the literature related to nurse navigation yielded myriad studies and reports; however, very few, except for those mentioned explicitly, addressed patient engagement. Additionally, terminology related to navigators is used interchangeably which is a source of confusion in the literature. There are consistent threads in the literature; the most obvious is that patient navigation conducted by nurses, other professionals, and qualified lay navigators result in improved patient outcomes (Brown, 2012; May et al., 2014; Pedersen et al., 2014; Plant et al., 2013).

Patient engagement. Patient engagement is not a new concept in healthcare; however, it has not always been part of the fabric of healthcare delivery. This is at times attributed to a well-entrenched paternalistic approach to care delivery: providers not giving patients an opportunity to question and provide input to their care (Tzeng, Yin, & Fitzgerald, 2015). Culturally, the assumption is that healthcare providers have the answers. Conversely, some patients may not be ready or prepared to assume the responsibility for participation in their care. Despite the issues stated, when patients are engaged in their care, the outcomes are better and at a lower cost (Sherman & Hilton, 2014).

Patient engagement involves partnering with the patient in the planning and delivery of care. It also involves embracing and encouraging patient-centeredness and removing obscurantism (Tzeng et al., 2015). Tzeng et al. (2015) also posited that engaging patients in care processes may yield improved health literacy and patient satisfaction. Engaging patients in care additionally allows organizations and providers the ability to evaluate programs and processes and implement changes that foster improved care outcomes and patient satisfaction (Sherman & Hilton, 2014). Having the ability to define and reliably measure and assess patient engagement is essential to understanding its role in patient care outcomes, quality, and, thereby, satisfaction.

The concept and measurement of patient engagement, although touted as being important to the health care industry, have continued to lag in mechanisms describing and measuring levels of patient engagement via evidenced-based measures of engagement (Graffigna et al., 2015). Patient engagement is not a linear trajectory over the course of an altered disease state; rather, the evolution of a contemporary, comprehensive view dominates the literature. Full patient engagement is a result of a series of events or intrinsic psychological milestones wherein the individual reframes his or her health state. The success of each milestone or phase is dependent on success in prior phases of the journey to engagement (Graffigna et al., 2015). Four phases are described in this position: blackout, arousal, adhesion, and eudaimonic project. This DPI project works from this conceptualized view of patient engagement.

Zhang et al. (2017) conducted a quantitative study to validate a Chinese version the PHE-s (Graffigna et al., 2015), the Chinese Patient Health Engagement Scale (CPHE-s) for use in patients with chronic diseases using "the World Health Organization processes for cross-cultural validation and adaption of self-report instruments" (Zhang et al., 2017, p. 3). The process used forward and backward translations by linguistic experts. The researchers used a sample of 377 and a sub-sample of 27 chronically ill patient participants selected using a consecutive sampling method and inclusion and exclusion criteria related to age and cognitive abilities. The age range of the sample was 34–78 years and 68% female. Prospective participants with mental and psychological impairments or with severe auditory deficits were excluded from this study. Zhang et al. (2017) used descriptive statistics and extensive statistical analyses in the validation process. The authors found that the CPHE-s is a reliable and valid instrument in the evaluation of the level of patient engagement. The ease of use and the brevity of the instrument offer clinicians the ability to use the results of the patient's scores to tailor care strategies to sustain engagement. A limitation may be due to recall bias given the self-reporting nature of the instrument and lack of the ability to discern skewing due to social factors, such as patients not reporting a true level of engagement.

Zhang et al.'s (2017) findings are consistent with Graffigna et al. (2015) wherein the researchers conducted validation and revalidation of the PHE-s. This scale is born of extensive literature analyses and in-depth qualitative studies that thoroughly explore the care management journey of patient with chronic illness. Zhang et al. conducted multiple pilots culminating with a validation study using a sample of 382 individuals with chronic diseases. Results demonstrate the reliability and validity of the PHE-s in measuring engagement. The evidence demonstrates that the PHE-s results can capture the complex psychological aspects of a patient’s engagement trajectory. Zhang et al. noted that additional study is needed to explore and substantiate the strength of the evidence of this validation. Study is needed in other patient cohorts and in other countries. The ability to use this instrument to plan and evaluate interventions is appropriate to the nature of this DPI project and validates its utilization.

Barello et al. (2012) conducted an analysis of academic literature related to patient engagement using bibliometric and qualitative content analyses. Searches spanned one decade culminating in the year 2012. Descriptive bibliometric analysis of these data evaluated quantitative leanings related to literature on patient engagement. The literature search exclusively included the term *patient engagement* to ensure conceptual integrity. Only articles with an abstract and specific engagement-related terms were included in the analysis. The authors reported an increasing curiosity regarding patient engagement on two fronts, academic and managerial. Publication trends show increases in nursing and medical literature. In general, there is a growing interest in patient engagement and the United States has led that interest over the study period with a total of 104 publications. Barello et al. stated that additional analyses are needed to definitively define the patient engagement and investigate patient experiences of engagement.

Burns et al. (2014) conducted a multi-phased and mixed-method design study to determine what patient, family, and provider/staff resources were needed to be mutually engaged in patient-centered care and decisions at a health system that serves over four million individuals in both rural and urban areas of Alberta, Canada. Four objectives guided the study in the quest to develop engagement resources: conducting a patient needs assessment; conducting a comprehensive literature review on engagement; developing an engagement resource toolkit; and introducing the toolkit in two interventions aimed at improving patient engagement. The focus was not just on the patient but also on the engagement experience of the patient, providers, and leaders.

This study by Burns et al. (2014) has relevance to the complexity of comprehensively addressing engagement. This multi-phased study used different methodologies for each objective and phase of the study, culminating in a preliminary toolkit that met the stated objectives of meeting the needs of patients, families and those involved in care delivery. Success in meeting each objective or phase was dependent on success of the prior phase. There was a limitation related to the time needed to thoroughly review the toolkit, resulting in decreased reviews and evaluations necessitating ongoing work. Five recommendations resulted from this study; the most relevant is that more effort on the part of the health care field is required to build a "culture of engagement and in particular, to engage leaders and providers in this important work" (Burns et al., 2014, p. 245).

Wolff et al. (2015) conducted a quantitative correlational study to examine patient engagement in health-related dialogue when family members or companions were present during a visit. The sample encompassed a convenience sample of 78 patient and companion pairs from 37 physician practices and accompanying surveys aligned with a care visit. The researchers reported that companion-assisted visits facilitated greater patient inquiry ($p = 0.017$) and decreased passivity in decision making and agreement ($p = 0.004$) among other findings. In addition, visits were 3.4 minutes longer than unaccompanied visits ($p = 0.025$). A notable limitation of this study is the sample size in relation to the study design and methodology and the negation of causality; however, this study has relevance. Findings indicate that alternative quality care measures that include patient and family engagement in care delivery processes could contribute to the concepts of engagement, one of which is self-management.

Gallivan et al. (2012) conducted a qualitative study utilizing a mixed-methods approach to acquire a cogent understanding of the term *patient engagement* and its relevance in different contexts, to include health care setting. The study used focus groups and interviews with patients, providers, and leaders of a large system which were utilized to validate a systematic literature review. The focus group consisted of 17 patients, three providers, and eight leaders who provided information commensurate with their understanding of the concept of engagement. A literature search of more than 10,000 articles yielded 23 articles that met the criteria for review. Within these articles, fifteen terms related to patient engagement were noted, although very little consensus exists regarding the definition of engagement. There is a need for a common understanding of the definitions and nomenclature associated with patient engagement; clarification is needed. Gallivan et al. posited that defining *patient engagement* and clearly articulating the intents and purpose of engagement is needed. In addition, defining the responsibilities of stakeholders in the process should provide clarification.

Graffigna et al. (2016) conducted a quantitative cross-sectional study with a sample of 93 individuals with type 2 diabetes mellitus to determine the role of the perception that health care providers can motivate patients to take the initiative to improve their level of engagement and activation in the management of their diabetes that included mobile and electronic health technology. With five working hypotheses and the use of five instruments of measurement to include the PHE-s (Graffigna, 2014), the authors confirmed the role of healthcare providers in facilitating patient autonomy in improving activation and engagement and that high levels of patient engagement is a predictor of activation. This includes self-management and apparent elevated confidence levels in taking a proactive role in management of their care.

The psychological aspects that define engagement are further demonstrated to be a key antecedent of self-management and to the use of health technologies. The researchers reported limitations due to the sample size and composition; nonetheless, the sample yielded adequate analyses. The composition of the sample does not represent the general population with type 2 diabetes in Italy. The salient point of this study is the implications for the study of how contemporary technology can be utilized to improve patient adherence to therapeutic regimens.

Patient engagement and the use of contemporary electronic health platforms are also addressed by Cook et al. (2013) whereby the researchers conducted a quantitative study to determine whether e-health applications and a mobile electronic device would promote patient engagement through self-assessment and self-reporting. In addition, the researchers examined the effect of these interactions on recovery times, using a sample of 149 cardiovascular surgical patients over the age of 50 who had an anticipated stay of five to seven hospital days. Using descriptive statistics and analyses, the researchers found assessment completion rates to be 97.6 with a total completion of 1,384 and associations between patient reports and lengths of stay and discharge disposition. Patients who are actively engaged in their care and use e-health applications had improved outcomes. Limitations were confined to a lack of e-health connectivity to the electronic medical record that could cause a loss of data. Implications for the field include the knowledge that inpatient stays can create opportunities to introduce new technologies that improve engagement and outcomes.

Consistent with patient engagement’s impact on care outcomes and recovery, Turner-Stokes, Rose, Ashford, and Singer (2015) conducted a quantitative prospective cohort analysis of episodes of care over a one-year period, and the number of patients totaled 80 neurological patients with a need for rehabilitative services. The purpose of the study was to evaluate relationships between patient and family engagement care planning to include goal setting, satisfaction with the process of goal setting, goal accomplishment, and rehabilitation goals. Findings demonstrated that engagement of patients and families in goal setting and planning correlates with satisfaction and improved functional outcomes in this population. Limitations of this study are the inclusion of a newly implemented tool and changes in the methodology and data collection processes that may have caused a type II error where data were insufficient. This study, however, sets a foundation for further study with adequate sample sizes.

Barello and Graffigna (2015) conducted a second-level study, a component of a phased, cross-sectional study to explore the experience of patient engagement and the relationship with quality of life in patients with chronic diseases. This study used a qualitative grounded theory design with a sample of 99 patients who were volunteers recruited from ambulatory care settings. Inclusion criteria included a minimum age and treatment for chronic conditions within a preceding six months. Patient interviews explored the engagement trajectory through illness management and the factors that hindered or facilitated quality of life. This study demonstrated that patient engagement in health care could be described contextually wherein the individual within a disease state can still recover purpose and focus in his or her life despite the impact of that disease state (Barello & Graffigna, 2015). This could also be described as the individual’s quest for goal fulfillment to project an authentic self into the future (Shahar, 2011). In addition, Barello and Graffigna (2015) noted that responses to illness change over the course of the illness trajectory, changes both in the manifestation and the associated intensity of the emotions. The researchers observed that the perspective of this study illuminates the limitations of measures of quality of life related to the ability to precisely assess the impact of disease states or therapeutic interventions and to enumerate and comprehend changes over time. This study has implications and value in providing some clarity regarding the link between the concepts of engagement and quality of life through input from patients who can articulate their experiences.

This review of patient engagement exemplifies the myriad facets of engagement applications: diabetes, neurological rehabilitation, chronic diseases, cardiovascular diseases, complex poly-diagnoses, and mobile and electronic health applications. The consistent thread of all studies is that patient engagement improves patient outcomes in a host of applications in addition to facilitating organizational changes and improvements in care delivery. The characteristics associated with engagement as described Barello et al. (2016) have proven to be common threads: (a) the behavioral dimension or what the patient does, the actions of the patient utilized to deal with disease and therapies; (b) the cognitive dimensions, what the patient thinks and knows, how he/she understands and processes the aspects of the disease; and (c) the emotional dimension, what the patient feels, psychological and emotional responses a patient experiences in acclimating to a life of living with a disease. A lack of cohesion between these dimensions may impede engagement.

A key component of engagement as described by Graffigna et al. (2015) is the ability of the patient to manage his or her health, identification of the patient’s level of engagement based on the PHE-s, and appropriate interventions to assist the patient through the illness trajectory from blackout to eudaimonic project. Graffigna et al. (2015) posit that failure of the health care system to provide support and assistance that addresses the patient’s needs may result in missed opportunities to facilitate engagement. The benefit of the ability to use an intervention such as nurse navigation to support the patient towards engagement is evident. Poleshuck et al. (2015) suggested that the navigator serves as a channel between a very bewildering, disjointed, dis-coordinated health care system and the biopsychosocial needs of patients.

In an intervention program that used the PHE model as the framework for the program designed to facilitate and increase patient engagement in the chronically ill, although not called navigation, aligned with the principles of navigation. Face-to-face and telephonic consultations delivered by trained facilitators included motivational activities, health information inquiry and use, emotional realignments, and planning of health actions was the core of the program (Menichetti & Graffigna, 2016). Emerging themes in the process of intervention development included the use of an evidenced-based guide; addressing multiple domains; communication; a mechanism to foster inter- and intra-facility care coordination; evoking change in patients through motivation; self-sufficiency versus presence; working in concert with patients; and supporting patient-centeredness as an organizational culture. This intervention is closely aligned with this investigator’s DPI project.

Graffigna and Barello (2016) posited that evolving evidence demonstrates that patient engagement is a “key solution for leading innovative actions in the complex and mutable context of healthcare delivery and organization" (p. 194). The authors also identify key concepts that encompass patient engagement; these concepts also align with patient navigation. Patient-centered care, partnerships between provider and patient, and shared decision-making are all principles of navigation. Patient engagement improves patient self-management, increases efficiencies, decreases lengths of stay, and, most importantly, improves care outcomes. Subsequent paragraphs cover the sub-themes of nurse navigation and patient engagement.

Patient self-management. Effective patient self-management is dependent on patient and family engagement in care even in the presence of health status changes or diseases that are often complex, life-changing and taxing on coping and support resources (Dabbs, Song, De Geest, & Davidson, 2013). Tzeng (2014) observed that patient self-management and patient engagement are closely aligned and are at times used interchangeably since there is a basis of empowerment in concepts. However, Tzeng posited that, for a patient to be motivated to self-manage, there must be an exchange of information and communication with the health-care team. Tzeng advocated for communication strategies to facilitate self-management. Passivity on the part of the patient is not conducive to self-management. Tzeng also advocated for a fully standardized engagement educational process included in continuous provider and health professional education. Engagement, navigation, and self-management are interrelated.

Consistent with Koester et al. (2014), Sullivan et al. (2015) conducted a qualitative study utilizing semi-structured interviews and a sample of 36 women with HIV enrolled in a specified program aimed at keeping HIV-positive patients in the required cycles of care. These women were all economically disadvantaged and African American. Nurse navigation was the central component of the program with education and support to achieve autonomy. The researchers found that qualified nurse navigators provide critical medical and psychological support in the removal of barriers and patient self-management. Limitations of this study include potential bias due to retrospective recall of navigated individuals; in addition, a social desirability bias due to the social stigmatization of HIV could have influenced participant responses. The study may inform the health field regarding navigation in this unique population.

Wang et al. (2016) conducted a quantitative cross-sectional study that addressed path model testing to examine relationships between patient empowerment and health literacy with self-management behaviors in patients with type 2 diabetes mellitus. A sample of 492 patients started at baseline and 395 or 80.2% completed the post-assessment using the assessment instruments: two diabetes-related scales, one empowerment scale, and one personal characteristics instrument. There was a significant association with self-management behaviors. Patients who started at a higher level of literacy scored significantly higher than those with lower scores at baseline. The limitations to this study, such as the sample type and location, participants' literacy and all residing in a limited area of Taiwan, negated generalizability. The study provides a baseline for additional study with a more diverse population with different levels of literacy acumen in younger age groups.

Kennedy et al. (2013) conducted a quantitative two-arm cluster randomized controlled trial using 44 primary care practices and 4,533 chronically ill patients from said practices. The study sought to examine whether an intervention entitled the Whole System Informing Self-management engagement employed in primary care versus no intervention would result in improved health outcomes and cost effectiveness, specifically, patient self-management. This intervention consisted of training sessions for practices using a host of resources and tools to include web-based access to information on resources for self-management.

Kennedy et al. (2013) found no statistically significant difference between the treatment arm and the control arm of the study. There was no significant effect on patient outcomes; that is, self-management support training had no effect on patient self-management behavior. Kennedy et al. reported limitations due to the loss of three practices resulting in 19 intervention and 22 control practices that may have caused a baseline imbalance. In addition, utilization outcomes were generated from self-reports which may be incongruent with alternate sources such as records of service. Despite limitations, the authors cite the large sample sizes and a well-validated intervention as strengths of this study. This study has value in utility as a comparator to studies with different interventions, time frames, or intensity of content. The challenge is to determine why training was not utilized as intended.

Schulman-Green et al. (2012) described self-management in chronic illness as a dynamic and interactive process employed to manage disease states. This process includes family participation, health care professionals, and the community. The process of management encompasses management of interventions, patient lifestyle management, and the psychosocial effects that a patient experiences. The studies cited aimed to understand and demonstrate ways in which self-management is facilitated or improved with mixed outcomes. Limitation ranged from sample size and geographic location (Wang et al., 2016) to study design and evaluation (Kennedy et al., 2013); however, each study has practice implications. This includes the last study cited (Kennedy et al., 2013) wherein interventions were found to have no effect.

Patient-centered care. Rathert, Williams, McCaughey, and Ishqaidef (2012) alluded to the six objectives for improving in the 21st century, noting that patient-centered care is among those objectives. Patient-centered care is provided in an empathetic, compassionate manner that is responsive to the needs of the patient at the time the patient wants care. Knowledge of patient values, stated preferences, and active decision making is essential to patient-centered care. Vanderboom, Thackeray, and Rhudy (2015) noted that patient-centered care seeks to understand the illness experience as it relates to the whole person within the context of the life experience of the individual, specifically, the environs, family, vocation, and cultural aspects. An essential component of this type of care delivery is the delineation of decision-making roles and plans for care. This position is consistent with the thrust of efforts of patient navigation and engagement.

Theodoridou et al. (2015) conducted a randomized controlled trial to evaluate an innovative model of mental health care that incorporated care delivery by the same team in three care areas: inpatient, acute day services, and outpatient services. The object of the study was to evaluate personal, team, and cross-boundary continuity in the acute mental health care setting. Comparisons with standard models of care were completed through statistical analyses. This study used a sample of 178 patients having admissions at a hospital with six units; however, one unit was excluded due to the specific designated services of that unit. Randomization was done in concert with the number of available units. Outcome criteria included length of stay, patient satisfaction with therapies, and the number of readmissions to the facility.

Findings showed fewer days to readmission, no difference in the number of readmission or lengths of stay as compared to the control group. There was a marked reduction is psychopathology and increase in satisfaction in the study group which the researchers attribute to care continuity and the establishment of a therapeutic relationship. Limitations include a higher functional score among the integrated groups at admissions and showed less psychopathology and a higher functional status. Analysis did not affect outcomes. In addition, blinding of patients and providers to prevent bias did not occur. Other limitations included disproportionate numbers treated in the study groups than the control groups and the use of the same treatment site. The implications for this study are that this type of model would contribute to efficient and effective patient-centered care.

Ekman et al. (2012) conducted a quantitative proof-of-concept study with a controlled pre-post design using a sample of 248 patients with congestive heart failure: 125 and 123 respectively to the intervention and standard care control groups. The study evaluated outcomes of patient-centered care that included length of stay, execution of activities of daily living, and quality of life related to the health state using an intervention that included the principles of patient-centered care. Fully implemented patient-centered interventions shorten lengths of stay while allowing the patient to retain functional capacity and quality of life while negating risks of re-hospitalization. The fact that this study was not randomized is a limitation in terms of reliability of the effect so outcomes should be viewed with caution. Other limitations are a disparity in the age and severity of illness in the intervention group, even with adjustments for the difference in subsequent analysis and the fact that the study was conducted in one facility. These issues make generalizability difficult. This study could be used as a basis for further study with different populations and in varied care locations.

Plewnia, Bengel, and Korner (2016) also concluded that patient-centered care plays a vital role in contemporary health care, noting that patient-centered care is conducive to patient satisfaction and patient care outcomes. The authors conducted a multicenter cross-sectional survey-based study to examine the impact of patient-centeredness on satisfaction and clinical outcomes in a sample of 1,033 patients who used rehabilitative services in Germany. Plewnia et al. utilized three survey instruments to measure patient-centeredness, patient satisfaction, and subjective ratings of changes in a patient's life situation. Patient-centeredness was found to be a predictor of patient satisfaction and care outcomes as evidenced by changes in life functions and health status. The study is not without limitations, as scales used did not meet standard distribution requirements that led to variance limits. Encountered ceiling effects of patient satisfaction also had the same drawbacks in variance constraints. The cross-sectional design negated the ability to identify causal relationships. Despite limitations, the study has strengths based on the design of the study in the use of multiple sites, unlike other studies. In addition, this study examined pervasive dimensions of patient-centeredness to include the biopsychosocial which is relevant to engagement.

Willis, Pratt-Chapman, Reed, and Hatcher (2014) conducted a quantitative study to determine best practices for implementing patient navigation and cancer survivorship programs. The authors utilized the Best Practices in Patient Navigation and Cancer Survivorship survey instrument to collect data and identify practices and processes related to what measures were tracked and the required supports that facilitate and resource the effort. The sample of 146 was taken from a population of health care professionals and 100 completed the survey. The sample was a mix of providers: 33% nurse navigators, 30% nurses, and 5% nurse practitioners with the balance of the sample being administrators, social workers, primary care providers and other professionals.

Willis et al. (2014) found that most-often-cited measures were those related to, and consistent with, the goals and principles of patient navigation: care coordination, addressing barriers, communication, and psychosocial disturbances. There is a need for leaders to understand staffing and FTE requirements for navigators, as well as ways to evaluate and measure outcomes. Because of the study design and the expedient nature of the study, the results do not represent the general pool of organizations with navigation services. The study has implication for further use for individuals contemplating programs designed to provide navigation and survivorship programs on a broader scale.

Studies show that, because of the use of alternate terminology related to patient-centered care, there is a need for clarity to avoid misinterpretation and confusion in use (The American Geriatrics Society Expert Panel on Person-Centered Care, 2016; Entwistle & Watt, 2013). The threat to realizing the full potential of patient-centered models of care is the lack of definition and the ability to operationalize the concept. Opportunities exist to reshape the narrative on patient-centered care to formulate standardized processes and parameters. Per the American Geriatrics Society Expert Panel on Person-Centered Care (2016), this is a requirement if the health care industry is to have a basis from which to provide patient-centered care.

In discussing patient engagement and activation, Pelletier and Stichler (2012) highlighted the relevance of patient-centered care and the role and contributions of the nursing profession to the health field, including the fact that nursing has used this model through many means. Nursing’s metaparadigm, person or client, environment, health, and nursing guides practice and support relationship-based care that anchors patient-centeredness. As a concept, patent activation addresses the level of patient engagement as it relates to an individual’s health management through stages of development (Pelletier & Stichler, 2013).

Patient activation. Patient activation and patient engagement are often used interchangeably; however, both have been used improperly to communicate different meanings that are often poorly defined (Hibbard & Greene, 2013). Hibbard and Green (2013) suggest that the focus of patient activation is the patient's motivation and capability of independently assuming responsibility for managing their care. Graffigna et al. (2015) acknowledged that there is overlap between patient engagement and patient activation; however, the authors observed that activation is primarily confined to the context of doctor-patient consultation. Conversely, the concept of engagement transcends this and moves to encompassing sequential multi-levels of the patient's realization of healthcare. Patient activation, as described by Hibbard and Greene (2013), drives engagement; patients with low activation scores are less likely to engage in care.

Graffigna, Barello, Bonanomi, Lozza, and Hibbard (2015) conducted a quantitative cross-sectional study with a sample of 529 Italian-speaking adult patients with chronic diseases who met inclusion criteria. The authors sought to demonstrate the validity of the Patient Activation Measure, a 13-item Likert scale instrument that measures the four stages of activation. This scale is designed to measure knowledge, skills, and confidence in disease management among patients. This scale was translated using the standard forward-backward translation as it is an American English scale. After undergoing rigorous scientific analyses, psychometric outputs proved the instrument to be valid and reliable for measuring activation in this chronically ill population. This further alludes to the universality of the instrument. One limitation of this study is the cross-sectional study design that did not allow calculation of test and retest reliability. This study adds to the body of knowledge related to this instrument and its applicability in different populations and geographic locations outside of the United States.

Alvarez, Greene, Hibbard, and Overton (2016) conducted a quantitative correlational cross-sectional study to examine relationships between provider support of provider self-management support behaviors with two physician-focused outcomes and one patient-focused outcome using a sample of 181 providers and empaneled patients. Study results showed health care providers with higher scores in clinician support of patient activation ranging from < 58.6, 58.6 to 69.9, and 70.0 to 100.00. Providers in the lowest third were less inclined to have positive beliefs regarding the value and relevance of a patient's involvement in his/her care, goal setting, or having knowledge about care. This is contrary to those scoring higher wherein this was positively correlated with the patient's activation levels. The prevailing consensus is that patients who are more activated have better care outcomes and are more engaged than those who do not (Hibbard & Greene, 2013). This study has several limitations: the cross-sectional design and the use of a single system negate generalizability, and self-reports may not accurately mirror actual behavior. However, there was correlation with provider behavior and scores and patient activation. Findings are indicative of the vital role that health care providers have in facilitating and sustaining engagement in their care.

Fiscella et al. (2015) conducted a quantitative randomized controlled study using a multi-modal intervention and sample of 360 individuals living with HIV in counties of New York. The purpose of the study was to assess the effect of a multi-modal behavioral intervention on patient activation in this population. This intervention included educational sessions, group training on the use of technology, and an electronic educational tool. This study had four overarching aims: to improve empowerment in the population; increase information and education; improve health; and reduce disparities. Outcome measures included improved activation levels as the focused outcome.

Improvements were noted in all measures with individuals with lower education and health literacy having the most significant changes in activation. Limitations of this study include the inability to determine which arm of the intervention caused the change/improvement without further analyses. This study has implications for generalization to populations with chronic diseases and as the basis for further and broader studies on smaller or larger scales.

Prey et al. (2016) conducted a quantitative study to describe the validity and reliability of the instrument utilized to measure patient activation, the Patient Activation Measure-13. The broader purpose was to evaluate if the instrument would be different between two groups: one with planned admissions the other with unplanned admissions. The sample consisted of 50 cardiology and 50 oncology patients, each divided based on the aforementioned criteria. This study indicated that the instrument has reliability and validity for inpatient use. The study further demonstrated significant differences in activation levels between patients having planned admissions versus unplanned admissions, the latter group being lower. This study was conducted in a setting that was large and urban, serving a diverse population. This contributed to the generalizability of the findings; however, the use of a single site may somewhat impede such generalizability. A practice implication would be the use of this instrument to facilitate patient care planning to improve care outcomes.

Reviews of patient activation illustrate the issues of definition and utilization of the term *patient engagement* and patient activation as studies are executed. Although this confusion does not alter the outcomes of the studies, it is evident that there is a need for further study and definition of both concepts. Graffigna et al. (2015) described the value of measuring engagement in the health industry, providing clarification to the concepts of engagement and activation, as well as describing engagement as multidimensional and holistic and based on cognitive, emotional, and conative stances as patients move towards goals associated with engagement.

***Care coordination*.** The Agency for Healthcare Research and Quality [AHRQ] (McDonald et al., 2014) verified that the way in which care coordination is defined and interpreted remains elusive as the concept's interpretation varies from person to person. Despite efforts, no consensus has materialized, and disparate definitions continue as evidenced by the current literature. Given these findings, AHRQ defined care coordination as "the deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient's care to facilitate the appropriate delivery of health care services" (Chapter 2, paragraph 1). This definition aligns with the principles of nurse navigation and patient engagement.

Homer et al. (2013) conducted a randomized controlled study to examine the effectiveness of a 16-week oncology nurse navigation program versus a non-intervention standard of care. The intervention encompassed educational information prepared in concert with advisory groups from the community. The patient sample consisted of 251 newly diagnosed cancer patients; 133 patients were navigated while the other population received standard care. The study was set in Seattle, WA, at a Group Health Cooperative. The nurse navigation process focused on categories of patient needs and issues to include emotional, spiritual, and familial in addition to medical issues. Collaborative care planning guided the process.

Findings support the use of nurse navigation in the stated population yielding myriad findings from this comparison and the case studies cited: the severity of a patient's medical condition does not necessarily dictate the level of distress; professionals must listen to patients more than they speak to patients in order to better assess their needs; weekly calls and interactions provide opportunities to provide psychological and social support when patients are distressed or immobilized by the magnitude of their illness; and understanding of a patient’s needs facilitates decision making. Practice implications include nurse navigation enabling practice within the nursing paradigm. The findings of cited studies are consistent with the principles of patient navigation. Study findings support Graffigna et al. (2016) theory that engagement is a highly individualized process that is unique to each patient, and that patients should be assessed to identify their level of engagement as part of the plan for care.

Altin and Stock (2015) conducted a quantitative study using a random sample of 1,125 German adults over the age of 18 to evaluate the impact of access to care and assistance with care coordination on patient satisfaction with care. The researchers used computer-assisted interviews done telephonically. The study considered patient demographics and self-reported health status in addition to the use of validated instruments to measure health literacy and perceived satisfaction with care provided by providers. Statistical analyses demonstrated that patients with adequate health literacy and good experiences with care coordination expressed higher levels of satisfaction with care received. Limitations of this study include the use of self-report data in lieu of more objective measures that may prove more reliable in measuring quality. Another limitation is the low response rate as it may cause bias but cannot be ascertained due to the absence of data related to those who did not respond to the survey. This study validates the need for new models and frameworks of care delivery in primary care, models that are vested in coordination of care and the assurance of health literacy needs of patients.

Naylor et al. (2011) conducted a prospective, quasi-experimental study with a sample of 172 at-risk patients registered in a proprietary Medicare program in the mid-Atlantic area of the United States. This population belonged to a specific plan, the Transitional Care Model. The purpose of the study was to evaluate the impact of the said program in the stated population through different episodes of illness. This model uses advanced practice nurses to provide care coordination services through collaboration with all stakeholders. The model also included the patient and family and streamlining plans of care to facilitate self-management. The program is designed to interrupt the cycle of frequent hospitalizations and use of emergent services. Home visits, accompanied visits to providers, and seven-days-per-week phone access are also offered in the program.

There was a significant reduction in re-hospitalizations (45 versus 60 with a $p<0.04$), and a reduction in total hospital days (252 versus 351 with a $p<0.032$) within a twelve-week period. There was also a reported reduction in cost of care delivery. This program successfully met the intended objectives. One study limitation for consideration is the fact that the patient’s health status and quality of life was only determined from the intervention group; this negates the possibility of statistical comparisons and affects generalizability. The study has implications for process, policy, and model changes for the management of transitional care in this and other populations.

Van Houdt, Heyrman, Vanhaecht, Sermeus, and De Lepeleire (2013) conducted a quantitative exploratory study to determine the effect of a revised care pathway on the quality of care and outcomes. The sample used is a sum of patients having a surgical procedure of radical prostatectomy in a region of Belgium. The study utilized a pre-intervention group of 46 patients and a post-intervention group of 46 patients. The intervention consisted of a 30-step process that covered the continuum of care from diagnosis through surgery, discharge home, follow-up and return to general practitioner within an 18-day period. Included in the first leg of the path is consultation, provision of an information packet, and phone contacts from appropriate personnel and services.

Pre-and-post intervention surveys were conducted finding that there were no differences in patient perceived communication among providers of care between the two groups. More patients in the post-intervention group received educational packets, 95.1% versus 81% in the pre-intervention group; 86% of post-intervention patients contacted physiotherapists in contrast to 56% in the pre-intervention group; and patients in the post-intervention group were reported to be pain free. This study has implications for further exploration of quality measurement and intervention outcomes for care pathways (Van Houdt et al., 2013).

The studies cited demonstrate the ways in which care coordination can be implemented and assessed with the stakeholders in the process. The factors that influence care coordination were discussed and the breadth of care locations and populations within which the concept is used was demonstrated. As an evolving care method, care coordination is designed to assess and manage the needs of patients who require a team-based, patient- and family-focused approach to navigating the patient through the complexities of the healthcare system (McDonald et al., 2014). Patient navigation provided by the nurse navigator can address the need as part of a care delivery model such as the NNP.

Patient satisfaction. Healthcare providers aim to provide care that is clinically effective in a manner that is safe and patient-centered. The Institute of Medicine (IOM) report, *Crossing the Quality Chasm* (Kohn, Corrigan, & Donaldson, 2000) indicated that this is not always achieved in the United States, calling for changes to care delivery systems and the provision of quality of care to all individuals. The report outlined six aims for achieving this goal: timely, safe, effective, efficient, patient-centered, and equitable care. Patient satisfaction was not included as a goal. This exclusion was not an oversight but rather a consideration that satisfaction was not an adequate measure of quality (Farley et al., 2014). Patient satisfaction has, however, continued to evolve to a measure by which healthcare organizations in the United States are evaluated. Survey tools that measure patient satisfaction are routinely used in myriad care domains, including the project's facility. Ranaghan et al. (2015) reported that patients are not satisfied when wait times for diagnostic and provider services are not done in a timely manner, this is a source of stress for patients. Ranaghan et al., in discussing the issues of patient satisfaction, barriers to care, and factors that affect care outcomes, cited Freeman's patient navigation as a model to address issues that impact satisfaction and care outcomes. Patient navigation, as executed by nurse navigators, can support the mandate of the IOM and improve patient satisfaction.

Post et al. (2015) stated that few studies have examined relationships between patient navigation and satisfaction, showing three studies of that nature, a comparative intervention. The authors conducted a group-randomized trial using a nested cohort design using 18 clinics in central Ohio. The sample was a total of 708 males and females with abnormal screening and diagnostic tests resolved as benign. The purpose of the study was to explore the impact of a telephone-based patient navigation intervention on patient satisfaction with cancer care. The study was conducted within the framework of the Chronic Care Model and the Social Support theory; in addition, specific aspects of the Health Belief Model were addressed. The clinics were randomized to use a navigation or a comparator model. Study participants in the latter study site used educational material delivered by mail based on the disease state or abnormality within a specified timeframe. Participants in both study arms completed post-study questionnaires.

Post et al. (2015) reported finding no significant effect of navigation on patient satisfaction with cancer care; this was an unanticipated finding. The authors posited that the lack of a presence in the care facilities and the model of patient navigation may have affected the outcome. Consequently, this finding is ascribed to this model of patient navigation. Disadvantaged participants who were African American were more likely to report lower satisfaction scores. In addition, the same held for the retired, unemployed and/or disabled. Employed patients scored highest; the authors attributed this to a possible higher level of health. Patients reported high satisfaction with patient navigators; however, a valid instrument was not used, so this outcome is not generalizable.

Several limitations are reported. Primarily, most participants were white females with breast cancer which limits generalizability; the geographic location of the clinics used could limit generalizability or other geographic locations in the United States, and the measure used was not validated. The study does have utility as a baseline for other studies, duplication of the study's design, and the cost (Post et al., 2015).

Boev (2012) conducted a secondary data analysis utilizing longitudinal data from 671 Practice Environment Scale of the Nursing Work Index (PES-NWI) surveys, 1,532 patient satisfaction surveys, and the Nurse Perception Survey to examine the relationship between nurses' perceptions of the work environment and patient satisfaction with care. This study was conducted in critical care units of a 750-bed hospital in the state of New York. The patient satisfaction survey was abridged to examine 12 of 26 items contained in the validated survey. This survey measures patient satisfaction with the nurse, physician, and the facility. The PES-NWI was adapted to the unit level and proved valid in measurement of nurses; perception of the work environment in the study sample (Boev, 2012). Findings indicate variations from unit to unit; however, patient satisfaction score averaged 4.48 out of 5.0. Nurses additionally reported moderate satisfaction with the work environment. The staffs' perception of the role of nurse managers and their abilities scored highest and correlated significantly with patient satisfaction. Favorable perceptions of nurse managers were found to be associated with a .424 point increase in patient satisfaction (Boev, 2012). Limitations are evident due to the methodology and use of a secondary analysis, use of data not intended for use in this study, and a constrained sample size due to the source of the data used. Despite the stated limitations, this study provides support for relationships between the work environment and patient satisfaction.

Otani et al. (2012) conducted a cross-sectional study utilizing secondary data and a two-level intercept model approach to present a rationale for using multi-level analysis in addressing environmental contexts in relation to patient satisfaction. Levels included patient characteristics and facility characteristics. Patient satisfaction data were obtained from telephone surveys conducted via a proprietary source that primarily specialized in patient satisfaction surveys. The surveyed population of 18,755 consisted of discharged patients over the age of 20 from one of ten facilities selected from a 13-hospital system over a two-year period. The study response rate was 37.0%.

Variables associated with attribute of care reactions included six construct variables which included nursing care. Constructs were measured with 5-point Likert scale questions. Patient satisfaction was measured in three dimensions: "overall quality, willingness to recommend, and willingness to return" (Otani et al., 2012, p. 261). Analysis was done using hierarchical linear modeling to examine the organizational aspects and effects of facilities with the unique patient predictors of satisfaction measures. There are significant associations of patients' attribute reactions to hospital care, nursing care being the second-most influential. Nursing and care by staff are critical to patient satisfaction in multiple hospital settings. There are limitations to this study; primarily, the size of the study sample as stated and the limited number of facilities from which the sample is drawn. This could interfere with the significance of the organizational factors. The cross-sectional methodology also precludes determination of cause and generalizability. More study is required.

In a study of 31 hospitals in the United States, Lyu, Wick, Housman, Freischlag, and Makary (2013) conducted a cohort study using Hospital Consumer Assessment of Healthcare Providers and Systems Survey (HCAHPS), the Center for Medicare and Medicaid Surgical Care Improvement Program, and the Safety Attitudes Questionnaire data to evaluate patient satisfaction as an indicator of quality care in the surgical domain. Patient satisfaction was reflected through 18 questions included in eight domains. In conjunction with the available data, this study utilized a secondary analysis through a correlation of global patient satisfaction scores. Questions rated a hospital stay and hospital recommendation to family and friends on a 0 to10 scale where 10 is the best hospital and 0 is the worst. Lyu et al. reported that patient satisfaction is independent of an organization's compliance with surgical processes of quality care and employee culture despite association in minimal domains. The researchers also found that patient satisfaction may provide insights regarding a facility's ability to provide acceptable service as a component of a patient's experience. The culture or climate of teamwork and safety was also found to be positively correlated with patient satisfaction scores. The authors caution that patient satisfaction, although an important metric, should not be used in isolation of other measures as a metric in the evaluation of quality.

Land, Jobanputra, Webber, and Ross (2012) conducted a qualitative study in a population of 147 patients from three outpatient clinics using a three-question survey. The aim of the study was to draw comparisons, via differences and similarities in patient experiences of the three clinics that managed diagnoses of human immunodeficiency virus, rheumatology, and diabetes. Patients reported satisfaction with the attitudes and approaches of clinic staff. This study has limitations because patients who provided responses may not be representative of the total population of the respective clinics. In addition, the cross-sectional methodology along with the specific patient types does not allow generalization to a larger population of patients.

Patient satisfaction has evolved as vital in the healthcare arena. Patient satisfaction scores are used as a measure of quality and a factor in the economics of healthcare organizations, a driver of not just quality but accountability (Ferrand et al., 2016). Patient satisfaction increases the likelihood of patient compliance with medical instructions which has the potential for improved care outcomes. The preceding studies indicate a range of findings that indicate an association between care delivered by nursing staff and patient satisfaction.

Patient care outcomes. O’Day et al. (2015) posited that most of the factors that are predictors of good patient care outcomes are patient behaviors. As such, engaged patient are in the best positions to experience better health care outcomes. O’Day et al. also acknowledged that one of three patients is not actively engaged in his or her own care. Patient navigation supports families through complex journeys, most frequently patients with a cancer diagnosis; however, navigation has been successful in patients with chronic health conditions to include HIV and cardiovascular disease (Zibrik, Laskin, &

Ho, 2016). Improved outcomes are facilitated through the removal of barriers, reducing delays that interrupt care and cause patient distress.

Lee et al. (2011) conducted a quantitative study using a non-equivalent control group pre-test post-test design to evaluate the effect of a nurse navigation program in a sample of 78 patients with a new cancer diagnosis receiving care at outpatient clinics in two Korean medical centers. The intervention consisted of a nurse navigator program staffed with baccalaureate or higher nursing credentials, with oncology experience, and who had been prepared with three weeks of navigator training. The control arm of the study received standard oncology care. Three outcome measures were evaluated: quality of life, satisfaction with care, and length of stay.

Lee et al. (2011) reported that the quality of life scores demonstrated improvements for physical and social functioning, p=.002 and p= .005 respectively in the intervention group. This group also demonstrated significant differences in satisfaction with care and experienced significantly shorter hospital stays with participants in the control group experiencing stays that were 9.11 days longer than the intervention group. Limitations included the non-randomized nature of the study and the design. There was also a dropout rate of 50.6%, which is high by scientific standards. The outcomes should be interpreted with caution (Lee et al., 2016). The study does have value in that the value of coordinated care utilizing nurse navigators yields positive care outcomes.

Harding (2014) posited that being distressed in conjunction with experiencing barriers to care and difficulties accessing care have a negative effect on the patient, possibly leading to increased mortality. Harding conducted a quantitative study using a descriptive, cross-sectional, survey design to evaluate the effect of nurse navigation on patient satisfaction and distress during the diagnostic process for breast cancer determination. This study setting was two outpatient radiology clinics: one in a community hospital, and one in a breast cancer center in Appalachia. The sample for this study was a convenience sample of 137 adult females presenting for biopsies at the mentioned care locations. Survey instruments included the Hospital Anxiety and Depression Scale, State Trait Anxiety Inventory, State scale, and the Patient Satisfaction Questionnaire. Patients seen at the community hospital were provided with customary care by support staff responsible for care coordination. Patients seen at the breast cancer center received the nurse navigation intervention that included education, support, and care coordination. Harding (2014) reported that navigated patients had lower scores on all distress measures, and overall satisfaction scores were negatively correlated with distress levels.

There are limitations to this study conducted by Harding (2014). The satisfaction survey used was not specific to oncology or nurse navigation and could affect results. Generalizability is limited because of the cross-sectional design, instruments utilized, and the use of one geographic region for the study. The study does have implications for future studies that could be conducted to facilitate the expansion of nurse navigation services in the study’s care settings. Navigation in the diagnostic phase of care delivery can yield an improved quality of care (Harding, 2014).

Luckett et al. (2015) conducted a quantitative study in a sample of 4,199 women to measure the effect of a patient navigation program on clinical no-show rates at a Pap-Smear Evaluation Clinic in a Boston health care center in the United States. The study utilized three databases that contained appointment scheduling data over two 2-year timeframes that included confirmation of a care episode. Another registry was used to explore links between participant characteristics and missed appointments. The intervention arm of the study uses a patient navigation program using one navigator with certificates of completion from two navigator training programs. The role of this navigator veered from the initial intent to be a resource for non-English speaking patients who had social, legal, and insurance needs. The role morphed to those functions that encompass the principles of navigation.

Patients who were non-white and not privately insured missed a greater number of appointments, had less favorable cytology outcomes, and more pathological cervical and vulva conditions. It was also found that 45% of no-shows resulted from misunderstandings that could have been mitigated with intervention from the navigator. It is concluded that patient navigators reduce no-show rates, thereby improving the possibility of patients keeping subsequent appointments which reduces risks and improves outcomes (Luckett et al., 2015). Limitations to generalizability exist due to the use of self-reported data that may not reflect the nature of the true issue of missed appointments. Additionally, an issue with the navigator database, the inability to distinguish between different types of missed appointments, may have generated a systemic error. This study has utility for further study.

Pomey, Ghadiri, Karazivan, Fernandez, and Clavel (2015) conducted a qualitative study using a grounded theory method and interviews of 16 patients with a minimum of one chronic illness. The study explored an assumption that better care outcomes are achieved when patients partner with care providers. Findings yielded three primary engagement practices in this population: learning, assessing, and adapting. These practices span learning and being informed on illness, exploring and examining the effects of treatment, and adapting through the utilization of strategies to fill gaps between a perceived health state and personal health goals. In addition, these practices enhance outcomes even when providers are less engaged. In addition, health literacy is improved and patient choices are improved when engagement and partnering are in place. This study also allows a new perspective to prevail—active versus passive participation of patients. Limitations exist in that findings derive from points of view of a select population and generalizability would be limited. Frequency enumeration was not accomplished using this method and should be done in future studies.

Across all studies, further research is needed to better validate study results and afford generalizability to broader populations and in different contexts. Additionally, continued research must focus on formulating interventions that are measurable, utilizing instruments that are validated and reliably measure study outcomes. In sum, despite limitations, the cited studies all have utility in assessing outcomes of patient navigation.

Summary

An a priori assumption is that using the principles of nurse navigation in care delivery supports and facilitates patient engagement; however, there is a dearth of information and inquiry related to the impact of an NNP or other navigation on patient engagement as described. This project serves as an initial inquiry to the subject of patient navigation and patient engagement. Graffigna and Barello (2015) posited that the point at which an ill patient resumes life activities with a positive approach despite the disease is the point of engagement. Freeman (2013, 2017) has successfully pioneered patient navigation using principles described across the oncology spectrum and that now moves across the care spectrum.

There is also a dearth of literature focusing on the effect of nurse navigation on the levels of patient engagement in a veteran population in an outpatient setting. Given the purpose of this project, it is imperative that the principles of patient navigation which are intended to meet the needs of the patient and family be carefully and successfully implemented based on a clear understanding of the baseline status of the patient. As evidenced by the varied sample populations, range of studies, methodologies and designs, and geographic locations wherein studies are conducted, the importance of patient engagement across the continuum of care is of the utmost importance.

The quantitative and qualitative methodologies and the range of designs utilized in the studies cited provide invaluable information related to the range of applications of the studies and projects and the utility of the design and methodology in this project. The methodology of any project is the component in which information is structured and presented in a cogent and cohesive manner that allows for not only the proper interpretation of results, but the ability to have the project replicated. As such, Chapter 3: Methodology outlines the way the methodology, design, instrumentation, data collection, and plan for analysis yield information about validity and reliability; therefore, these have applicability and utility to the organization and the field of nursing.

Chapter 3: Methodology

The purpose of this DPI project was to measure and describe the impact of the implementation of a NNP on patient engagement**,** a precursor to quality patient care outcomes. The investigator sought to facilitate and support the successful implementation of an NNP and measure levels of patient engagement pre- and post-implementation of the program. The impetus for this project is that it is not known if or what organizational factors or processes contribute to the facility's inability to achieve quality indicator outcome scores at or above programmed benchmarks. The facility experiences challenges to achieving acceptable measures in access to care, ambulatory care sensitive condition hospitalizations, patient satisfaction with providers, and clinical outcomes measures as evidence by the SAIL data. There is a consensual perception among the leadership that patients are not actively engaged in their care processes.

This project will inform and educate the facility, the nursing field, and the health care field regarding the impact of an NNP on patient engagement. This project serves to inform and educate this VHA facility and system, the profession of nursing, and other health care specialties regarding the relevance of an NNP to patient engagement, specifically, in the context of an ambulatory care environment that serves unique and medically complex patients. Literature related to nurse navigation and engagement as a construct in VHA ambulatory care has not been identified. There is a gap in the knowledge that can be addressed by the findings of this project. If additional VHA facilities elect to conduct such a project, it may serve to inform the system relative to common issues related to achieving quality benchmarks within the system. Specifically, such issues may be impeding engagement, negatively influencing quality, care outcomes, and system benchmarks. Current literature report findings of improved patient care outcomes when patients are engaged (Graffigna & Barello, 2016). Findings of this project could inform further projects or research that will advance the study of how patient engagement can be facilitated through nurse navigation in varied care settings and patient populations.

Important aspects of a project's design and methodology include the types of instruments selected for data collection, types of measurements, measurement categories associated with the data, and the way the data are analyzed (Flannelly, Flannelly, & Jankowski, 2014). This project uses a quantitative descriptive methodology and a pre-test post-test design. The project includes one validated instrument for data collection, the Patient Health Engagement scale [PHE-s] (Graffigna & Barello, 2014). This instrument includes five questions rated on a seven-point Likert scale to measure patient engagement in an evolutionary pattern of four distinct phases: blackout, arousal, adhesion, and eudaimonic project. Demographic questions determined included: (a) age range, (b) gender, and (c) clinic or service where care was received.

The project used a self-report strategy, nominal and ordinal levels of measurement, and a descriptive correlational approach for data analysis. This approach is appropriate to the purpose of the project and the questions posed because descriptive statistics allow for measures of central tendency and variability of the variables to be identified and described. In using inferential statistical methods, the relationships between the project's variables can be identified (Flannelly et al., 2014; Ingham-Broomfield, 2014). Statistical methods would allow estimates of probability relative to the observed differences between groups to be made. This chapter is organized to address the purpose of the project and to outline the manner in which this project will be executed. It will also outline the identified problem, the question to be answered, methodology and design utilized, instruments utilized, sources of data, validity and reliability of the project, data collection procedures, data analysis procedures, ethical considerations, and limitations of the project. A summary of this chapter will be provided.

Statement of the Problem

It is not known if or what organizational factors or processes contribute to the facility's inability to achieve quality indicator outcome scores at or above programmed benchmarks. The facility experiences challenges to achieving acceptable measures in access to care, ambulatory care sensitive condition hospitalizations, patient satisfaction with providers, and clinical outcomes measures as indicated by the SAIL data (DVA 2017a). There is a consensual perception among the leadership that patients are not actively engaged in their care processes. To reiterate, the most recent SAIL data indicate that the healthcare facility does not achieve programmed benchmarks. Opportunities for improvement therefore exist within the project facility. It is important to note that the Veterans Health System has experienced challenges with aspects of care delivery, most notably, access to care. A comprehensive assessment of patient engagement has not been completed at the facility. Because initiatives to improve patient outcomes have not achieved the desired result, the implementation of the NNP and measurement of engagement will inform the stated problem. Current literature support findings that improved engagement and patient navigation improve patient care outcomes (Freeman, 2012, 2013; Graffigna & Barello, 2016).

NNPs executed by nurse navigators and other types of navigators can improve patient care outcomes, including an improved quality of life (Freeman, 2012, 2013, 2017). These findings are consistent with the endpoint of patient engagement wherein the patient is capable of self-management and continuity of life as described by Graffigna and Barello (2014). Nurse navigators using the nine Freeman principles and the Harold P. Freeman Model for Patient Navigation (HPF-MPN) can assist patients through the care continuum while alleviating the stressors associated with barriers in access, social, and financial factors that may present on varied continuums (Freeman, 2017). Measurement of levels of patient engagement pre- and post-implementation of the NNP will serve to inform the facility and provide a foundation for further study-related care outcomes.

Clinical Question

This project was designed to answer the following clinical question: Among patients at a Veterans Administration outpatient facility, how does a nurse navigation program, compared to before the implementation of the nurse navigation program, increase patient engagement as measured by the Patient Health Engagement Scale over a six-week period? This question was analyzed by identifying and addressing the dependent and independent variables, stating the statistical tests which are applicable, and understanding how these tests are utilized. The dependent variable is the level of patient engagement as measured by the PHE-s (Graffigna et al., 2015). The independent variable is the implementation of a nurse navigation program based on the Nine Principles of Patient Navigation (Freeman, 2012; 2013; 2017).

Project Methodology

A quantitative project method provides numerical data to which statistical tests are applied in order to answer research questions and test assumptions. Quantitative data will help a researcher draw conclusions about relationships among variables to inform the area of study (Connelly, 2014). The selection of a quantitative approach enabled a precise examination of the relationships between the dependent and independent variables

(Grove et al., 2013). Using a quantitative method with the stated design allowed a more accurate measurement of the concepts under investigation in the project (i.e., patient engagement). It also allowed for the use of inferential analysis to produce findings generalizable to a broader population. A quantitative design, in this project, led to the assessment of levels of patient engagement at three clinics of the health care facility before and after the implementation of the NNP using a reliable and validated instrument and employing reliable quantitative instruments.

Research Design

A descriptive pre-test post-test design was used to investigate the concepts of engagement, the dependent variable, in relation to a NNP, the independent variable, as described in the problem statement and project question. A descriptive, pre-test post-test design is appropriate when the project involves assessing the change in a variable measured at two different points in time. Because the purpose of this study was to determine if patient engagement changes from before the implementation of the NNP to after the implementation of the NNP, a descriptive, pre-test post-test design was appropriate for this study. Additionally, there was no random assignment of participants in this project. As such, a nonexperimental design was the appropriate design.

The independent variable is the implementation of the nurse navigation program based on the Nine Principles of Patient Navigation and the HPF-MPN (Freeman, 2017). Patient engagement domains were measured by the PHE-s, a five-item, seven-point survey instrument, which measures the four levels of patient engagement: blackout, arousal, adhesion, and eudaimonic project (Graffigna & Barello, 2014). The PHE-s has been validated in multiple formats to include Italian, English, Spanish, and Chinese using rigorous and appropriate psychometric methods. Within these scores, the patient can self-score at an intermediate level to reduce the possibility of the outcome being influenced by social desirability factors.

From a health care provider's perspective, the benefit of having access to engagement scores is that they can transition from the patriarchal approach to care that focuses on patient adherence to one that focuses on the patient's experiential report and motivation towards self-management in the care process. Providers are then able to provide the care and support that fosters and increases engagement and outcomes (Graffigna & Barello, 2016). The PHE-s is scored or calculated based on the median of the PHE scores on all items. The patient is scored on one of the four levels of engagement: blackout, arousal, adhesion, or eudaimonic project. Care planning and delivery can then be targeted based on the patient's score and ability to partner with and participate in self-management during the care delivery process. The PHE-s has been validated as an instrument that reliably measures the dimensions of engagement. Details on operationalization of these domains are provided below.

Population and Sample Selection

The target project population was the population of registered VHA beneficiaries who receive care in the orthopedic, medical services, and cardiology services of the VHA facility who were referred for nurse navigation services. A convenience sample of volunteers has been drawn from a sampling frame derived from patients referred for navigation services in those care areas. The sample includes only patients from the stated health care facility located in the far western area of the state of Texas. The facility serves a total beneficiary population that exceeds 35,000. The facility provides a range of medical and surgical services on an outpatient basis and does not have 24-hour/7 days-per-week services or inpatient holding capabilities; this is an ambulatory patient care facility. This facility consists of a main facility and two strategically located Community-Based Outpatient Centers (CBOCs).

The target project population was registered VHA beneficiaries who receive care in the orthopedic, medical specialties, and cardiology services and were referred for navigation services by a nurse navigator. A convenience sample was drawn from a sampling frame of the stated population. Sample size was calculated using G*Power 3.1.9.2 (Faul, Erdfelder, Buchner, & Lang, 2009). The power analysis was based on a Wilcoxon Signed-Rank test and assumed a medium effect size (d = .5). Sample size is a factor influencing the level of both Type 1 and Type II errors (Tomczak, Tomczak, Kleka, & Lew, 2014). To minimize Type 1 and Type II errors, an alpha level of .05 and a power level of 80 were used. To achieve a power of .80 with an alpha of .05 and a medium effect size (r = .5), a minimum sample size of 35 was required.

There were no exclusion criteria for the sample. Inclusion criteria were current enrollment and registration at the project facility, newly referred to a nurse navigator, receiving care in one of the three care areas, and willingness to voluntarily participate. The sample was constrained to this care system because of the nature of the project in relation to the specificity of the project issue. This plan was subject to change due to facility constraints; however, approved processes have been stringently adhered to. If the plan varied, the reason for the change has been documented in the appropriate chapter of this paper. As such, the change of navigation units is explained in upcoming chapters. Data collection procedures are outlined in this chapter. This sample has been recruited through an introductory one-on-one in-person or telephonic presentation explaining who this writer is, the purpose of the project, the confidentiality of the participant’s information, the duration of participation, time frames involved, and the nature of the questionnaire intended to be completed. In addition, there was a follow up e-mail or telephonic communication as required.

Standardized packages were prepared for use in the data collection process by the investigator. Contents included a recruitment letter, the Grand Canyon University (GCU) Minimal Risk Consent Form, the Health Information Portability and Accountability Act (HIPAA) form, PHE-s questionnaires, and a stamped self-addressed envelope. The process for the acquisition of informed consent included use the GCU Minimal Risk Informed Consent Form adapted for use in this project. The consent outlined the project and its purpose, risks to the participant, confidentiality, and the ability to withdraw and/or refuse to participate at any time without repercussion. The consent form was explained in detail to each prospective volunteer and the opportunity to ask questions and have them answered prior to consent was afforded. The researcher emphasized the confidentiality of information, the privacy of any information exchanged, and the ability to withdraw from the project. The GCU Health Information HIPAA form was also used and explained during the consent process. A copy of the consent was provided to the volunteer. If the process was done telephonically, verbal consent was obtained and annotated; however, the signed consent was mailed in a self-addressed envelope to the investigator.

Data collection was conducted at the health care facility or by telephonic means as appropriate. Survey tools do not include identifying data and are retained in an encrypted file on a personal password-protected computer and retrieved for use as required and necessary. This writer retains numeric information related to scores per survey in a secure, encrypted file. There is no identifying personal information on any questionnaires utilized; therefore, confidentiality of information has been ensured. The surveys are numbered and correspond to the demographic data sheet, informed consent document, and contact information.

Instrumentation

Patient engagement was measured using the PHE-s (Appendix B.), a five-item survey that measures patient engagement over four phases: blackout, arousal, adhesion, and eudaimonic project (Graffigna et al., 2015). This instrument generates ordinal-level data that are amenable to quantitative statistical analysis. Menichetti and Graffigna (2016), Zhang et al. (2017), and Graffigna et al. (2015) have utilized the five-item PHE-s to measure patient engagement. The five items are measured on a seven-point scale on the continuum from blackout to eudaimonic project with intermediate points between each level represented by alpha codes A through G. A numeric value of 1 is assigned to A and B options selected; 2 to C and D options selected; 3 to all E and F options selected; and 4 to G options selected. The PHE-s is scored based on the median of the PHE scores on all rows, placing the patient on one of the four levels of patient engagement (Graffigna & Barello, 2016).

Validity

The PHE-s has been validated in multiple formats to include Italian, English, and Chinese using rigorous and appropriate psychometric methods. Factor analysis is a recommended approach for the determination of an instrument’s construct validity (Grove et al., 2013). Graffigna et al. (2015) refined a nine-item scale and subsequently established validity of the PHE-s through a series of pilots and confirmatory factor analysis utilizing a pilot sample of 48 patients and subsequently 352 and 382 patients in the final validation. The sample consisted of three groups: 206 for exploratory analysis, 146 for confirmatory analysis, and 48 for test-retest reliability. The relative fit indices exceeded the critical fit value of .90 with comparative fit index (CFI) = 0.981, RMR = 0.018, and RMSEA = 0.059 (Graffigna et al., 2015). This means that the model demonstrated good fit and validity. An exploratory categorical principal component analysis (CATPCA) was conducted and yielded a one-factor solution that explained 67.4% of the total variability in the data indicating that the one-factor instrument was valid (Graffigna et al., 2015).

Zhang et al. (2017) also validated the Chinese Patient Health Engagement Scale (CPHE-s) using a sample of 377 individuals with chronic illnesses. The authors reported CFI = 0.983, RMR = 0.014, RMSEA = 0.067 and good infit values ranging from 0.74 to 1.43 for all scale items. All findings were consistent with the English and Italian versions of the PHE-s. The authors further reported the PHE-s as a reliable and valid instrument for the assessment of levels of engagement of individuals in their health management.

Reliability

The reliability of an instrument refers to the consistency of measurement across the items. The higher the level of reliability, the less measurement error will be present in the data (Grove et al., 2013). The validity of an instrument is dependent on the reliability of the instrument. The instrument utilized in this project has been evaluated for reliability using the Cronbach’s alpha coefficient. The range of possible scores for this measurement is 0.00 to 1.00, with 0 indicative of no internal consistency and 1.00 indicative of absolute internal consistency. A reasonable expectation is that an established instrument would score in the range of 0.80 (Grove et al., 2013). George and Mallery (2016) suggested that Cronbach’s alpha values of 0.70 or higher demonstrate an acceptable level of reliability.

According to Gadermann, Guhn, and Zumbo (2012), Ordinal Alpha is comparable to Cronbach's alpha, with the difference being that Ordinal Alpha is a more reliable measure for ordinal data for a project such as this. Graffigna et al. (2015) reported the Ordinal Alpha via Empirical Copula of 0.85 for the PHE-s while Zhang et al. (2017) reported 0.89 in the validation of the CPHE-s. In both validation studies, internal consistency is reported as satisfactory, indicating that this is a reliable measure of engagement for use in this project.

Data Collection Procedures

The conduct of projects deemed to be in the interest of the facility was permitted at the discretion of the facility's senior leadership. Written permission to conduct this project was obtained and that letter of permission was forwarded to the Grand Canyon University Institutional Review Board (IRB). Grand Canyon University (GCU) provided IRB approval (Appendix A).

The request for volunteers who met the criteria of being a registered VHA beneficiary receiving care in the orthopedic, medical specialties, or cardiology clinics and referred for nurse navigation services was conducted via one-on-one in-person or telephonic scripted presentations. This was accomplished after the patient was identified for navigation by the physician or nurse navigator and the nurse navigator had initiated contact with the patient and informed him or her of navigation functions to be performed. The nurse navigators provided contact information of navigated patients to the investigator after he or she verbally consented to meet with or accept a call from this investigator. Sealed manila envelopes containing the GCU-templated Informed Consent Form, HIPAA Form, a Letter of introduction or Recruitment Letter, the PHE-s questionnaires, stamped investigator self-addressed envelopes, and an investigator contact information card were prepositioned with nurse navigators. Envelopes were provided to potential volunteers who agreed to be contacted. Data collection was conducted by two methods: in-person or telephonically. Steps for both processes follow:

In-person. In-person data collection was done face-to-face with the volunteer using a fully assembled package with the GCU templated recruiting letter, GCU Minimal Risk Informed Consent Form, Health Insurance Portability Act Authorization Form (HIPAA), and PHE-s questionnaires. The following steps were employed:

1. An introduction to the investigator and the project accompanied by the written Informed Consent Form. All aspects of the consent were covered with emphasis on the right to withdraw consent at any time in the process, the confidential nature of information provided, the security of the data provided, the time frames for the project, and an estimated time investment for the project. Volunteers were also made aware of the fact that I had no knowledge of their medical histories and did not have a need to have any information of that nature.
2. Review of the HIPAA form.
3. Review of the nature of the questionnaire to be used.
4. Questions were answered if asked or clarification provided.
5. Informed consent to participate was acknowledged and the volunteer was asked to sign the consent form and the HIPAA form and the investigator signed the consent form
6. The initial questionnaire was again reviewed and completed (pre-test) and questions answered if the volunteer had questions.
7. A number was assigned to the volunteer’s information and questionnaire.

8. Post-test data collection was completed at the appropriate time after telephonic coordination with the volunteer for a manner of collection, in person or telephonically.
9. Responses of pre- and post-questionnaires were transferred to an encrypted electronic file and maintained on a password-protected computer and hard copies were maintained in a PIN-controlled locked file in a locked cabinet.

Telephonic data collection. Telephonic data collection was accomplished using all documents utilized in face-to-face collection and the IRB-approved telephone script:

- The volunteer received a fully assembled sealed manila envelope with a card with the investigator's contact information stapled to the outside.
- The volunteer consented to receiving a phone call from the investigator.
- A call was placed to the volunteer and it was ascertained that he or she has consented to the contact. Possession of the sealed envelope was verified.
- The time required for the call was established prior to proceeding. When necessary, a different time was negotiated.
- An introduction to the investigator and the project was completed using the IRB-approved telephone script.
- Review of the HIPAA form.
- Review of the nature of the questionnaire to be used.
- The volunteer was asked to verbalize consent and sign the Informed Consent Form and the HIPAA Form.
- The volunteer read the questions and was asked to follow and mark his/her copy of the questionnaire with a response.

- Any questions posed were answered.
- Mailing instructions for the questionnaire and consent documents were restated.
- Date of the encounter and responses were documented with a numeric identifier.
- Copy of the investigator signed consent mailed to patient.
- The post-questionnaire was completed telephonically at the specified timeframe.
- Follow-up calls were made as required or necessary.
- Volunteers were thanked for their participation and reminded of the contact information available to them.
- Responses of pre- and post-questionnaires were transferred to an encrypted electronic file and maintained on a password-protected computer, and hard copies were maintained in a PIN-controlled locked file in a locked cabinet.

Data on gender, clinic, and age were verified via a verbal request and linked as an addendum to each completed survey using a record and numbering system that allowed linkage. The PHE-s was the only questionnaire used for pre-test and post-test in data collection for this project.

The PHE-s was used in hard copy format and responses transferred to an Excel data file that included no patient-identifying data. The pre-test and post-test questionnaires do not include identifying data but were assigned a number that corresponds to an individual’s name, address, telephonic and email contact information if available, and the name of nurse navigator was maintained on a separate electronic record. The file that contains demographic data in maintained separately from volunteer responses and can only be linked through a number identifier. Files are stored on a password-protected file on a password-protected computer. Completed hard copy questionnaires are stored in a PIN-controlled locked box in a locked cabinet. Data will be maintained for a three-year period at which time hard copy documents will be destroyed using a personal shredder and computer files will be deleted. An external encrypted drive will be destroyed by removal of the drive casing and manual destruction of the drive components. Volunteers who decided not to participate at any point in project were not included in the analysis.

The sample was recruited from a sampling frame (*n* = 51) referred for navigation in the orthopedic, medical specialties, and cardiology services collectively. The goal was to achieve a minimum sample of 35 participants to achieve adequate statistical power. No volunteer from this population had been excluded from the sample; all patients seen in the identified care areas who were selected or referred for navigation were eligible to participate. The sample was constrained to this facility because of the nature of the project in relation to the specificity of the project issue.

Data Analysis Procedures

Participants' survey responses were coded into electronic spreadsheet format and imported into the Statistical Package for the Social Sciences (SPSS), Version 24 (IBM Corporation, 2016) for data analysis. Descriptive data analysis was conducted to achieve data familiarization and to capture the quality of the raw data. Descriptive methods allowed data to be analyzed, summarized, and displayed or presented in a manner that is easily understood and interpreted. As such, measurement of central tendency is the reported median of the variable. Mean, median, and standard deviations are reported for continuous variables. Frequencies and percentages are reported for categorical variables.

Inferential statistical methods allow the investigator to draw inferences from the sample data to the population. In relation to this type of analysis, there are two types of tests: parametric and non-parametric. Parametric tests have the advantage of providing the ability to make specific assumptions. There are four conditions for these type of tests: data must be interval/ratio, random selection of the sample, normal distribution of the data, and similarity in variation among conditions (Bettany-Saltikov & Whittaker, 2013). Non-parametric tests, although less powerful, can be used in analyses without the constraints of the aforementioned criteria and conditions. Because the dependent variable (patient engagement) in this project is ordinal, non-parametric tests have been used for data analysis.

In order to address the project question, a Wilcoxon Signed-Rank test was conducted, as it is an appropriate statistical test when the goal of the project is to compare scores between two different points in time on a dependent variable that is not normally distributed (Field, 2013). Because the project question involves comparing ordinal patient engagement scores from pre-test to post-test, a Wilcoxon Signed-Rank test was the appropriate analysis to use. In this analysis, the dependent variable was patient engagement scores as measured by the PHE-s. The time points being compared were pre-test and post-test. Statistical significance of the test was determined using a significance level of .05. A significant result would indicate that there was a change in patient engagement scores from pre-test to post-test.

Ethical Considerations

Participant volunteers remain protected in accordance with the tenets of the Belmont Report and the National Research Act (Department of Health, Education, and Welfare, 1979), which provide guidance for the conduct of research involving human subjects. Grand Canyon University's Institutional Review Board's approval was granted. All participants have been fully informed of the nature of the project, the risks or absence of risk, and manner in which their privacy would be protected to ensure that there is no unforeseen threat through participation. Individual rights to not participate have been respected when those in the population chose to either not participate in or withdraw from the project. Specifically, participants were informed that the project is completely voluntary and that they could exercise the right to stop participating in the project at any time without consequences. No participant was coerced and there was no monetary or other compensation for participation.

The risks associated with participation in this project were not greater than what participants would normally encounter in their daily lives. All data collected from participants have been kept confidential and secure. Physical copies of participant data have been maintained in a locked file stored in a locked room. Electronic copies of the data are password-protected and stored on a password-protected personal computer and on an encrypted storage device. Data will be maintained on the encrypted system for three years from the date of the completion of the project. Any facility or healthcare system requirements that supersede the stated data storage plan will be adhered to. There are no additional requirements to date. Project findings shall be published in accordance with university and healthcare facility requirements. Findings have been shared with the facility; however, no identifying participant information has been included or shared. Facility authorizations and requirements have not negated my responsibility to adhere to Grand Canyon University policies related to this DPI Project and all applicable industry and federal laws, regulations, and guidance.

Limitations

Limitations related to the method, design, and samples exist. The sample population derives from one VHA outpatient facility in a geographically unique location with a unique population. In addition, this is a convenience sample not selected through randomization. The pre-test post-test design allows data to be utilized to establish changes over time; however, it does not allow the evaluation of causation because participants were not randomly assigned. In addition, observation on a longer-term longitudinal basis (i.e., more than two time points) was outside the scope of the present project (Grove et al., 2013; Sedgwick, 2014). These facts, in association with the fact that this is a single location project, cause limitations that may affect generalizability. The quantitative method does not present limitations to this project; moreover, the PHE-s is a validated instrument and does not interfere with the project's outcome. The findings of this project shall be utilized to generate further study in the matters of patient engagement, nurse navigation, and patient care outcomes.

Summary

The consideration of methodological issues is of the utmost importance to the success of the project and its utility to the health care facility and nursing field. As such, this chapter has described the elements of the methodological approach to this project. The clinical question is validated by the gap that exists in the literature and the needs of the project location.

With the framework of this project, a validated instrument was selected to ensure that the appropriate levels of measurement are available to conduct analysis with the appropriate tests required to answer the project's question. Levels of measurement in association with the project variables have been discussed in relation to the instrument selected. Using the stated project design and a quantitative methodology, a descriptive pre-test post-test is appropriate for this project.

With a well-designed project, one may collect, evaluate, synthesize, and analyze data to elucidate information that accurately informs the planning and implementation of innovative interventions to address the level of engagement and the impact on activities that facilitate quality patient care. Chapter 4: Data Analysis and Results reintroduces the project and provides a detailed description of data analysis to include the results of all statistical tests done to answer the project question.

Chapter 4: Data Analysis and Results

The purpose of this Direct Practice Improvement (DPI) project was to measure and describe the impact of the implementation of a nurse navigation program on patient engagement**,** a precursor to quality patient care outcomes. This project's question was: In patients at a Veterans Administration outpatient facility, does a nurse navigation program, compared to before the implementation of the nurse navigation program, increase patient engagement as measured by the Patient Health Engagement scale (PHE-s) over a period of six weeks? It is not known if or what organizational factors or processes contribute to stagnation of progress towards achieving quality indicator outcome scores at or above system benchmarks. Scores in quality measures include access to care, hospital admissions, patient satisfaction, and clinical outcome measures (DVA, 2017a). There is consensus among the leadership and staff that patients are not actively engaged in their care processes.

A pre-test post-test design was used to determine if patient engagement, the dependent variable, increased after the implementation of the NNP, the independent variable. This design was appropriate because measurements were required at two points in time. The independent variable is the implementation of the nurse navigation program based on the Nine Principles of Patient Navigation and the Harold P. Freeman Model for Patient Navigation [HPF-MPN] (Freeman, 2013, 2017). Patient engagement domains were measured by the PHE-s, a five-item, seven-point Likert scale instrument (Graffigna & Barello, 2015).

This chapter summarizes the collection of data and presents the results of the data analysis conducted to address the project question. Descriptive data will be presented, followed by an outline of the data analysis procedures. Then the results of the data analysis will be presented. The chapter will end with a summary of the findings.

Descriptive Data

This project used a convenience sample taken from the population of registered beneficiaries who receive services in one of three service areas/clinics of the project facility: orthopedic, medical specialties, and cardiology services at the time of the phased program implementation. The differences in implementation times were due to hiring and staffing considerations. The priority of implementation was based solely on the decision of the facility’s leadership in conjunction with the physician staff members. The mix of facility service areas and complexity of services provided were stated considerations. The orthopedic service navigation program was first implemented, followed by the medical specialties and, subsequently, the cardiology service. Timeframes for implementation were March through May 2017. The estimated population served by this facility ambulatory VHA facility is approximately 35,000 beneficiaries; however, actual population by clinic is undetermined due to the nature of the system and eligibility and registration requirements. Volunteer participants were recruited from a sampling frame ($n = 51$) from patients referred by the physician to the nurse navigator from April through August 2017 during the period of data collection.

The sample collected for this study included 38 participants who were identified as patients being referred for navigation during the period of data collection, April through August 2017. Two participants withdrew from the project, resulting in a total of 36 participants included for the purposes of data analysis. The demographic characteristics of the final sample are displayed in Table 3. The majority of the participants were men ($n = 32$, 88.9%), and most participants were more than 60 years old (*n* = 20, 55.6%). The largest number of participants came from the orthopedic clinic (*n* = 16, 44.4%).

Table 3

Demographic Characteristics of the Sample

Variable	*n*	%
Gender		
Female	4	11.1
Male	32	88.9
Age		
< 30	2	5.6
30-45	4	11.1
46-60	10	27.8
> 60	20	55.6
Clinic		
Cardiology	8	22.2
Medical Services	12	33.3
Orthopedic	16	44.4

Note. Percentages may not sum to 100.0% due to rounding error.

Data Analysis Procedures

The questionnaire data were entered into an electronic spreadsheet file and then imported into SPSS 24.0 for data analysis. Before this analysis, the researcher conducted a Cronbach's alpha analysis of internal consistency to determine the reliability of the PHE-s. Table 4 displays the results of the reliability analysis. The pre-test and post-test Cronbach's alpha analysis of internal consistency was conducted to validate reliability of the PHE-s with a finding of .90 and .88 respectively.

The results demonstrate that the PHE-s had high reliability at both pre-test (.90) and post-test (.88).

Table 4

Cronbach's Alpha Coefficients for Engagement at Pre-test and Post-test

Variable	No. of Items	Cronbach's Alpha
Pre-test Engagement	5	.90
Post-test Engagement	5	.88

A Wilcoxon signed-rank test was conducted to address the project question: In patients at a Veterans Administration outpatient facility, how does a nurse navigation program, compared to before the implementation of the nurse navigation program, increase patient engagement as measured by the PHE-s over a period of six weeks? This was an appropriate statistical test to use because the goal of the project is to compare scores between two different points in time on a dependent variable that is ordinal and not normally distributed (Field, 2013). A Shapiro-Wilk normality was completed to validate that data are not normally distributed ($p = <.05$). In this analysis, the dependent variable was patient engagement score as measured by the PHE-s, which is an ordinal-level measure. The time points compared were the pre-test and post-test. Statistical significance of the test was determined using a significance level of .05. A significant result would indicate that there is an increase in patient engagement scores from pre-test to post-test. The only statistical assumption of the Wilcoxon signed-rank test is that the dependent variable is measured on an ordinal, interval, or ratio scale. Because patient engagement is measured on an ordinal scale, this assumption is met.

Results

Patient engagement at both pre-test and post-test was measured by the five items of the PHE-s. The five items are measured on a seven-point scale with each point represented by alpha codes A through G. Following the instrument scoring guidelines

(Appendix C), a value of 1 was assigned to responses of A or B; a value of 2 was assigned to responses of C or D; a value of 3 was assigned to responses of E or F; a value of 4 was assigned to responses of G. An engagement score was then determined based on the median of the items, placing each respondent in one of the four levels of patient engagement: blackout, arousal, adhesion, and eudaimonic project (Graffigna & Barello, 2016). Descriptive statistics and frequencies of engagement scores are presented in Tables 5 and 6. At both pre-test and post-test, the largest proportion of participants (*n* = 14, 38.9%) had engagement scores of 3, which corresponds to adhesion. On the engagement continuum, this is the third of four phases.

Table 5

Descriptive Statistics for Engagement at Pre-test and Post-test

Variable	*M*	Median	*SD*
Pre-test Engagement	2.56	3.00	0.97
Post-test Engagement	3.06	3.00	0.89

Table 6

Frequencies for Engagement at Pre-test and Post-test

Variable	Blackout (1) *n* (%)	Arousal (2) *n* (%)	Adhesion (3) *n* (%)	Eudaimonic Project (4) *n* (%)
Pre-test Engagement	6 (16.7)	10 (27.8)	14 (38.9)	6 (16.7)
Post-test Engagement	2 (5.6)	7 (19.4)	14 (38.9)	13 (36.1)

The project question was: Among patients at a Veterans Administration outpatient facility, how does a nurse navigation program, compared to before the implementation of the nurse navigation program, increase patient engagement as measured by the PHE-s over a period of six weeks? A Wilcoxon signed-rank test was conducted to address this question. The results of the test were statistically significant, *p* = .001, indicating that there was a statistically significant increase in patient engagement from pre-test to post-test.

The ranks from the Wilcoxon signed-rank test are displayed in Table 7 Negative ranks represent instances in which participants’ post-test engagement was lower than their pre-test engagement. Positive ranks represent instances in which participants’ post-test engagement was higher than their pre-test engagement. Ties represent instances in which participants’ post-test engagement was the same as their pre-test engagement. This means that engagement from pre-test to post-test decreased for three participants, increased for 18 participants, and remained the same for 15 participants. The mean ranks show that, when the absolute value of the differences between pre-test and post-test engagement were ranked from smallest to largest, the positive ranks (*M* = 11.25) had a higher average rank than the negative ranks (*M* = 9.50). These results demonstrate that engagement statistically significantly increased after implementation of the NNP.

Table 7

Results of Wilcoxon Signed-Rank Test

Rank	*N*	Mean Rank	Sum of Ranks
Negative Ranks	3	9.50	28.50
Positive Ranks	18	11.25	202.50
Ties	15		

Note. *Z* = -3.27, *p* = .001.

Summary

Thirty-eight participants were recruited for this study, and 36 were included in the final data analysis. There were 32 male participants and four female participants. Fifty-six percent of the sample population were >60 years of age. The largest number of participants came from the orthopedic service area.

The Wilcoxon signed-rank test was conducted to answer the question: Among patients at a Veterans Administration outpatient facility, how does a nurse navigation program, compared to before the implementation of the nurse navigation program, increase patient engagement as measured by the PHE-s over a period of six weeks? The results of the analysis were statistically significant (*p* = .001), indicating that engagement significantly increased after implementation of the NNP.

Data analysis with statistical tests that are appropriate for the level of measurement, such being ordinal level data for this project, is essential to informing the project’s results. Chapter 5 contains a discussion of these findings and the implications of the project. Chapter 5 will contain a summary of the project and findings, conclusions, implications for theory and practice, and recommendations for practice and future projects.

Chapter 5: Summary, Conclusions, and Recommendations

Identifying changes in levels of patient engagement is relevant to the focus of Nurse Navigation Program (NNP) processes and assures that patient needs are being appropriately and comprehensively addressed through a patient-centered, coordinated approach to care delivery. Patient navigation has been demonstrated to improve patient care outcomes (Freeman, 2012) Barello et al. (2012) reported that patient engagement is a major factor in improving care delivery and clinical outcomes. Koester et al. (2014) found patient care transitions and engagement with social services among vulnerable populations to be associated with patient navigation. Current literature demonstrates the efficacy of nurse navigation and patient engagement in positively influencing patient care outcomes in varied care environments and patient populations. Current literature has not demonstrated a finding of these concepts as a construct in a VHA ambulatory setting. The findings of this project can inform the facility of the impact of the implemented NNP on patient engagement. With this understanding, the facility can address the use of NNP processes to deliver care that improves engagement and care outcomes.

The engagement process is successive and on a trajectory through the blackout, arousal, adhesion, and eudaimonic project phases wherein the patient moves from a position of dependence on the health care provider to a position of partnership. Individuals have the capacity to differentiate between themselves as being ill and as persons; they are engaged. The removal of barriers to care through coordination with internal and external providers and agencies, patient-centered care that allows individualized care planning, and patient education, provided through a NNP by a nurse navigator, facilitates patient engagement (Barello, 2016). Improved patient engagement in this VHA facility can improve patient involvement in the management of their care and translate into improved care outcomes. Improved outcomes can be evidenced in SAIL scores that are closer to or reaching benchmarks over coming review cycles.

Using a quantitative methodology with a descriptive, pre-test post-test design, the project's intent was to answer the question: among patients at a Veterans Administration outpatient facility, how does an individualized nurse navigation program, compared to before the implementation of the nurse navigation program, increase patient engagement as measured by the PHE-s over a period of six weeks? The purpose of this DPI project was to measure and describe the impact of the implementation of a nurse navigation program on patient engagement**,** a precursor to quality patient care outcomes. The use of the stated methodology and design and data analysis answered the project's question, the implementation of an NNP-improved patient engagement.

This project serves as an explanatory inquiry to the subject of patient navigation and patient engagement in the context of this project and patient care environment. As executed, this project informs nurse navigation processes at this VHA facility and provides a foundation upon which the assessment of levels of patient engagement can be incorporated into NNP processes and utilized to facilitate patient-centered, coordinated care. Knowledge of levels of patient engagement can be used in interventions that facilitate improved care delivery and thereby improved patient care outcomes. In addition, findings can inform additional study that will further the understanding of how patient engagement can be facilitated through nurse navigation and the use of appropriately designed, jointly planned patient navigation processes based on the patient's level of engagement and specified patient needs.

Summary of the Project

The project's intent was to answer the question: Among patients at a Veterans Administration outpatient facility, does a nurse navigation program, compared to before the implementation of the nurse navigation program, increase patient engagement as measured by the PHE-s over a period of six weeks? The implementation of the NNP and measurement of levels of patient engagement using the PHE-s were essential answering the project's question. Answering the question can allow the facility to further explore policies and processes that can sustain and expand nurse navigation and encourage changes in SAIL scores that measure outcomes within the VHA system and the project facility.

The issue that engendered this project was that the facility does not know if or what organizational factors or processes are contributing to the facility's inability to achieve quality indicator outcome scores at or above programmed benchmarks. The facility experiences challenges in achieving acceptable measures in access to care, ambulatory care sensitive condition hospitalizations, patient satisfaction with providers, and clinical outcomes measures as evidence by the SAIL data that have been described. There was a consensus among the leadership that patients are not actively engaged in their care processes. The leadership made the decision to implement a NNP in orthopedic, medical services, and cardiology care areas.

When patients are not engaged, their ability to effectively participate in the care planning, receive and use educational information, and self-management are impeded and thus care outcomes are less than optimal. Disengagement allows the health care provider to employ a paternalistic approach to care wherein the responsibility for care decisions rests with the individual. Patient-centered care delivered by nurse navigators through a nurse navigation program can foster patient engagement and improve care outcomes.

Key functions of the NNP included assisting the patient through the barriers of a complex care system by coordinating appointments and communicating those processes to the patient; providing education specific to the needs of the patient; assuaging fears and concerns through information and dialogue; and ensuring that care issues are addressed through adherence to established facility and system standards. Executing these functions allowed navigators to provide patient-centered care that is important to moving a patient through the phases of the engagement continuum. The delivery of patient-centered care seeks an understanding of a patient's health or illness experience from a perspective of the individual's social, cultural, and environmental experiences (Vanderboom et al., 2015). Removal of barriers to care, care coordination, patient education, patient-centeredness and patient engagement are precursors to improved care outcomes. The data analysis done for this project demonstrates that the implementation of a NNP increased patient engagement.

This final chapter provides a summary of this project that includes findings in relation to the project question and the focus of the project. In addition, project conclusions, implications for practice, limitations identified, and recommendations for future projects related to the findings based on the analysis of data are presented and discussed.

Summary of Findings and Conclusions

This DPI project answered the question: Among patients at a VHA outpatient facility, how does a nurse navigation program, compared to before the implementation of the nurse navigation program, increase patient engagement as measured by the PHE-s over a period of six weeks? The PHE-s measured levels of patient engagement at the beginning of patient navigation by a nurse navigator and at the end of navigation or at six weeks of navigation. Increased levels of engagement between these two measures as determined by analysis with use of the Wilcoxon Signed-Rank Test were determined to be statistically significant (p = .001). The analysis determines whether there is a significant change from pre- to post-test. The analysis demonstrates that there is a significant change in engagement, the dependent variable, from pre-test to post-test. The positive mean ranks (n=18) = 11.25, and the negative mean ranks (n = 3) = 9.50. This finding indicates a confidence level of .99 and supports the a priori assumption that a NNP could influence patient engagement. The mean ranks indicate that, when the absolute value of the differences between pre-test and post-test engagement were ranked from smallest to largest, the positive ranks had a higher average rank than the negative ranks. Negative ranks represent instances where the volunteer's post-test score was lower than the pre-test score. Positive ranks are represented by instances where the volunteer's post-test score was higher than the pre-test score. This difference in scores is indicative of a significant increase in engagement from pre- to post implementation of the NNP.

Descriptive data. The sample for this project was predominantly male (*n = 32,* 88.9%) and above the age of 60 (*n = 20,* 56.6%). This is consistent with the National Center for Veterans Analysis and Statistics (2017) report that found the veteran population to be 92% male and the median age of veterans as 64. There were 38 participants of which 36 completed pre- and post-surveys. There were two (5.6%) participants <30 years of age, four (11.1%) between the ages of 30 and 45, ten (27.8%) between the ages of 46 and 60, and 20 (55.6%) greater than 60 years of age. There were four female participants (11.1%).

A gap in knowledge related to application of the concepts of engagement and navigation as a construct in this unique and complex population and care environment exists. Knowledge of the impact of a NNP on patient engagement serves as an explanatory inquiry in this population and environment and contributes to existing evolving knowledge of the use of nurse navigation in care environments that are not oncology focused. Navigation outside of the oncology domain is evolving and has been reported in medical, surgical, and chronic diseases among others (Ferrante et al., 2010; Kelly et al., 2015; Lippman et al., 2016; McMurray & Cooper, 2016). This project can add to the body of health care and nursing knowledge. The project demonstrates the outcome of a NNP on patient engagement in a unique care environment, a VHA ambulatory facility. No finding of a similar project is evident in current literature. This project can serve to fill that gap in the knowledge. Documented increased engagement in this VHA facility can contribute to the development of pathways for care delivery that involves the use of patient-engagement assessments through the PHE-s. Scores can be used to establish the patient’s level of engagement and aid in the development of plans of care that are individualized and patient-centered.

Knowledge of the levels of engagement of patients served can allow focused, patient-centered, and coordinated care planning that removes barriers to care and facilitates progression along the engagement continuum which facilitates improved patient care outcomes. Hallmarks of patient navigation include the removal of barriers to care and patient-centered care (Freeman, 2012); as such, this is consistent with Koester et al. (2014), who posited that the removal of barriers to care facilitates engagement. Moreover, Flickinger et al. (2013) and Lippman et al. (2016) concurred, in that care coordination in special populations presents unique challenges. However, Koester et al.

(2014) observed that navigation can break the cycles of disengagement and facilitate continued care. Assisting patients through the often-complex care system by coordinating care and communicating required processes to the patient, providing education, assuaging concerns through information and dialogue, and ensuring that care issues are addressed serves to meet the needs of the patient and facilitate patient centeredness (Freeman, 2013, 2017). Patient-centered care is important in moving a patient through the phases of the engagement continuum to full engagement. The findings of this project are that 75% of project participants were at the third and fourth phases of engagement after implementation of the NNP; the pre-implementation total was 55.5%. Three participants scored lower on post-test than on pre-test and 18 participants scored higher on post-test than on pre-test. The NNP improved engagement and can improve patient outcomes.

The project sample is unique and complex because it is an exclusively veteran population with care needs that may be of etiologies specific to such a population. The project was also conducted at a VHA facility in a northwestern city of the state of Texas that borders a foreign country. The largest Forces Command Army Installation is located in the middle of the city. The geographic location is culturally unique with influences from the military, its neighbor state, and the foreign country.

There is a commonality between patient navigation and patient engagement because they share key components in fostering patient engagement: patient-centered care, coordinated care that eliminates barriers to care, the patient as a partner in care, and support along the care delivery pathway. The use of the HPF-MPN in conjunction with the PHE-model as frameworks for this DPI project is supported by the findings of this project. The mean rank differences between negative ranks (= *9.50*) or decreased post-test scores and positive ranks (= *11.25*) or increased post-test scores is indicative of a statistically significant difference in participant levels of engagement from pre- to post-implementation of the NNP. This result is further validated with a probability value of $p = .001$; hence, there is a less than one in one thousand chance that such a finding is random. The PHE-model's concepts and the principles of the HPF-MPN coalesced to inform the NNP's approach to patient care that yielded improvements. Fostering patient engagement required care coordination, and plans of care based on the needs of the individual patient, patient-centered care, patient education and information, and support aimed at moving the patient through the engagement continuum.

Progressing through the phases of the engagement continuum to the phase of engagement or eudaimonic project is indicative of patients being able to reframe their thinking related to their health state in a positive manner. The patient can utilize resources, see themselves as having options for an acceptable quality of life despite an illness state, accept information and education, and participate in self-management of his or her care. Patients who are engaged have better health care outcomes (Graffigna & Barello, 2016). The PHE-model in concert with an NNP that removes barriers to care through care coordination with internal and external agencies and providers, provides the appropriate skill level of the navigator that meets the needs of the patient, clearly delineates the start and stop points for navigation, and delivers patient-centered care is conducive to improved engagement and improved care outcomes.

The genesis of this project was the project facility's concern that benchmarks in access to care, ambulatory care sensitive condition hospitalizations, patient satisfaction with providers, and clinical outcomes measures on the SAIL reports were not being met. The implementation of the NNP and measurement of patient engagement indicates that the NNP statistically significantly improved engagement. Research demonstrates that engagement improves patient care outcomes (Graffigna & Barello, 2016; Jenerette & Mayer, 2016; Tzeng et al., 2014). Research additionally demonstrates that nurse navigation and patient navigation improves patient care outcomes (Brown, 2012; Freeman, 2013; Koester et al., 2014; Mayer al., 2014; Wang et al., 2015). A nurse navigation program that uses the principles of navigation with the intent of delivering individualized, patient-centered care through an episode of care can improve patient engagement and affect scores on the SAIL reports over time.

The HPF-MPN along with the principles of patient navigation as described by Freeman (2012, 2013, 2017) were used as the baseline framework for processes and tools utilized to implement and execute the NNP program. The PHE model, in concert with findings derived from the PHE-s, allowed interpretation of participant levels of engagement validated by scientific analysis and outcome presents. Given that Graffigna and Barello (2016) and Graffigna et al. (2013) described patient engagement as a multidimensional and psychosocial process that encompasses the way the individual feels, thinks, and acts regarding their health, validated and improved engagement scores are significant. Improved scores support the use of the HPF-MPN and its principles to execute the NNP to improve patient engagement and care outcomes.

Assessed levels of progression along the engagement continuum of blackout to eudaimonic project depend on the patient’s progression and the restructuring of the way illness is perceived by the patient (Graffigna & Barello, 2016). Care that is supportive, patient-centered and coordinated along with opportunities to afford patient self-management is relevant to fostering patient engagement. Participants in the first phase of engagement or blackout decreased from pre-test to post-test (16.7% to 5.6%), and, in the second phase or arousal, from 27.8% to 19.4%; there was no change in the third phase or adhesion (38.9% to 38.9%); and in the fourth and final phase or eudaimonic project increased (16.7% to 36.1%). The sum of this analysis is that 75% of the participants in this project are at the adhesion and eudaimonic project phases of engagement wherein participants are on a trajectory to becoming or being partners in their care. Barello and Graffigna (2015) observed that engagement in respect to health care allows the individual to regain a quality of life that allows participation in care processes.

Participants have essentially moved from a position of being disorganized or psychologically distressed (blackout) by a disease process of issue to a state wherein they are more informed and act as co-constructors of their health care with the ability to engage in self-management (Graffigna & Barello, 2016). This analysis finds that 36.1% of the project's population achieved the eudaimonic project level of engagement, up from 16.7% pre-intervention, and 38.9% of the population achieved adhesion wherein they are more accepting of their health states and are more emotionally prepared to address and manage the changes in their lives. The number of patients at the first level of engagement (blackout) decreased to 5.6% from 16.7%. Despite this study being a small, short-term project, the findings are meaningful to the field because they provide baseline information to inform further study of the concepts explored and could be a basis of comparison.

Implications

The purpose of this project was to measure and describe the impact of the implementation of a nurse navigation program on patient engagement**,** a precursor to quality patient care outcomes by answering the project's question. Answering the project's question required a descriptive pre/post-test design and the use of a valid and reliable instrument, the PHE-s. The use of statistical tests, the Wilcoxon Signed-Rank test, and analysis appropriate to ordinal-level measure data support the strength of the findings. Most relevant is that the statistically significant change in engagement from pre-test to post-test as evidenced by a higher positive mean rank f (M = 11.25) and a significant probability value (p = .001) demonstrate that change. Analysis of the project data answered the project question by determining whether the implementation of an NNP would increase patient engagement, a precursor to quality patient outcomes. These findings demonstrate that engagement significantly increased after the implementation of the NNP at the project facility.

The findings of this DPI project reveal that the NNP as implemented improved patient engagement in three care areas of implementation: orthopedics, medical services, and cardiology. Knowledge of the magnitude of the change and percent changes from one phase to another from pre-test to post-test can provide the facility with information relevant to the efficacy of the NNP. The facility can use findings to further structure the NNP, expand the program to additional care areas, and consider levels of navigators required to serve those populations. Consideration for close monitoring of SAIL data for improvement in the areas of concern can inform trends towards improved outcomes. Using SAIL data can also support targeted navigation efforts.

Theoretical implications. Use of the HPF-MPN and of the principles of patient navigation provided the framework for the execution of patient navigation. Essential navigation efforts included establishment of a start and end point for navigation, patient-centeredness, removal of barriers, navigation across disconnected systems, and the match of the skill level of the navigator to the needs of the patient. The model covers the entire continuum of care, encompassing prevention through the end of life and serving to ameliorate the disconnect between the finding of a disease state or exacerbation of a health condition and the timely and efficient delivery of care to address it (Freeman, 2012, 2017).

Fostering patient engagement requires care coordination, appropriate plans of care, education, and patient-centered care (Graffigna & Barello, 2016). Use of the PHE-s that is supported and interpreted by the PHE-model and the results described support the theory that engagement is a dynamic process that involves a patient reframing the way he/she perceives illness, accomplished through the stated approaches to care. In the context of this project wherein engagement was positively influenced by an NNP, the theory posited in the PHE model is supported and findings could be further employed in care delivery models.

The purpose of this quantitative DPI project was to measure and describe the impact of a nurse navigation program on patient engagement**,** a precursor to quality patient care outcomes. The purpose of the project has been accomplished, demonstrated by the stated results of a statistically significant increase in patient engagement from pre-test to post-test. The project adds to the existing body of evolving knowledge regarding NNPs in care areas other than oncology. This project provides an introductory exploration of the efficacy of an NNP in increasing patient engagement in a Veteran population with complex care needs in a VHA ambulatory health care facility. The theoretical framework used in the this project—the PHE-model and the HPF-MPN as coalesced constructs—demonstrated that the principles of patient navigation used in the delivery of care can provide the support, education, care coordination, and patient-centered care that allows a patient to progress on the engagement continuum and experience improved care outcomes. Because a project such as this does not exist in current literature, using the models as a coalesced construct to measure engagement in this VHA environment invites future projects in alternate environments to address the gap.

The PHE model allows care teams to somewhat understand how a patient feels or his/her attitude towards health states and management. As an evolutionary process through the stages of blackout, arousal, adhesion, and eudaimonic project, support from the health care team is required to move patients along the engagement continuum. It is vital that health care providers understand where patients are on the continuum. This can be done via a valid and reliable instrument that measures engagement such as the PHE-s.

Practice implications. The facility can establish an enduring framework for navigation that addresses individualized patient needs based on the valid and reliable evaluation of levels of engagement and the employment of a patient-centered approach to care. The facility can use the results of this project as baseline information to augment the NNP by utilizing the positive results to validate the need for engagement assessments to ensure that patient-centered care includes an assessment of the patient's response to an illness or health issue episode. More importantly, assessment can guide the type and timing of educational and other interventions that allows the individual to move through the phases of engagement. Knowledge of an individual's engagement phase allows improved care planning and delivery of patient-centered and coordinated care (Graffigna & Barello, 2016). Findings can be used to inform the facility, the system, and the field regarding the measurement of engagement in unique patient populations. Engagement is relevant to the patient's health state experience. Patients can be at the first phase of engagement, blackout, when there is a new diagnoses, change in health status such as a disease reoccurrence or relapse, or an issue that causes distress. There is an inability to readily grasp information or partner with the provider for care delivery. Patients may feel overwhelmed and act passively, deferring health management to health care providers.

Engagement is not an exclusively linear process, as patients may advance through the continuum and regress to a lower phase. A referral to the NNP allows the patient to receive services that support him or her through the process of managing an episode of an adverse health state. Six individuals in the sample population were at the blackout phase of engagement at pre-test and two were at the blackout phase at post-test, indicating that NNP functions influenced their engagement. Three patients scored lower on the engagement at post-test than on pre-test. At pre-test 44.5% of volunteers were measured at the first two phases of the engagement continuum, blackout and arousal. At post-test, 25% percent of volunteers were measured in the blackout and adhesion phases of engagement. Patient navigation has a specified start and stop point that varies from patient to patient. Setting a timeframe for pre- and post-tests data collection was done with consideration for this principle. Episodes of navigation differ from patient to patient; however, the maximum time frame of six weeks allowed for navigation processes to be fully established and or completed.

Future implications. The findings of this project can be utilized as the baseline for further study at the facility, within the system, and in health care, contributing to the knowledge related to navigation and patient engagement from a multi-dimensional perspective as explained by Graffigna and Barello (2016). This study can also be used to appropriately measure the levels of engagement to make determinations regarding what navigator skill level is required for the patient population served. This project can contribute to the broad body of knowledge related to patient navigation and the concept of patient engagement that have been coalesced in this project to better inform care delivery. The need for health care to move from a disease-focused model to a more patient-centered model is supported by the findings of this project.

Limitations. Although the PHE-s is a valid and reliable instrument and the methodology and design of this project are appropriate, there are limitations to this study that could affect generalizability. The sample is an exclusively veteran population, the care location is a VHA health care facility, and the geographic location is a far western city in the state of Texas in the United States. This project was also confined to three units of the facility. These considerations can affect the generalizability of these findings.

Recommendations for Future Projects

The success of nurse navigation is well reported in oncology care; however, nurse navigation is evolving as a care model that can be employed in a myriad of care specialties and environments to include mental health, medical, surgical, neonatology, human immunodeficiency management, and chronic conditions. This project can also be repeated in other ambulatory facilities or inpatient health care centers within the VHA system and private health care systems. The findings of the project can be used as the basis for projects that use dependent variables that measure engagement and specific care outcomes such as care transitions or ambulatory care sensitive condition hospitalizations and patient experience scores of primary and specialty care providers.

The purpose of this quantitative DPI project was to measure and describe the impact of the implementation of a nurse navigation program on patient engagement**,** a precursor to quality patient care outcomes. Patient engagement is associated with increased patient self-management and improved clinical care outcomes (Graffigna & Barello, 2016; Hibbard & Greene, 2013). Patients who are engaged have moved from dependence on the practitioner to partnering with the provider in shared decision making in managing their care. In this patient sample, the implementation of an NNP significantly increased the levels of engagement.

One recommended future project at this facility would be a longitudinal investigation of the impact of patient engagement on ambulatory care-sensitive hospitalizations as well as patient satisfaction with primary and specialty care providers in the navigated populations post-navigation compared to pre-navigation. The project should be executed utilizing a quantitative methodology and a pre-test post-test one sample design in one or two focused care areas, particularly the oncology and cardiology service areas. Studies such as these would directly contribute to an analysis of the further impact of the NNP on improving engagement and care outcomes.

The project can also be replicated in a special population such as mental health where the dependent variable could be the number of appointments kept. A quantitative methodology and a pre-test- post-test design can be used to compare missed appointments prior to implementation of navigation and engagement measurement and post implementation. Access to care, care coordination, and patient-centered care have been recommended to improve patient engagement which improves patient compliance with therapeutic regimens and care outcomes (Graffigna & Barello, 2016; Tzeng et al., 2015).

It is also recommended that the methodology and design employed in this project be utilized across patient populations with a focus on newly registered beneficiaries to the studied care areas at the project facility. The dependent variable would be improved work center outcome performance relevant to measured outcome variables previously mentioned in the specific care locations. This would provide additional information relevant to the inputs that support improved outcomes. Another recommendation is that this project be replicated in a different health care facility within or outside of this system. An inpatient setting with a more diverse patient population and central geographic location is recommended. The latter would provide opportunities for improved generalizability of findings.

Further inquiry in the areas of patient engagement and nurse navigation are demonstrably warranted. The literature is rife with examples of studies that support positive findings for navigation and patient engagement as described in this paper; however, additional inquiry in care areas in addition to oncology are warranted. The concept of patient engagement as described in this project is the first to explain it as a multi-dimensional experience. Measuring engagement in terms of the patient’s feeling, thinking, behavioral or acting dimensions that allow them to traverse the phases of engagement is also a concept in engagement. Studies or projects that examine patient engagement measured by the PHE-s in relation to those dimensions of care that reflect quality of care and good outcomes are warranted.

Recommendations for Future Practice

Nurse navigation programs have demonstrated success across domains as an evolving model of care in ensuring patient engagement (Koester et al., 2014); care coordination, patient-centered care, and benchmarking quality metrics (Freeman, 2013; May et al., 2014); continuity of care, emotional support, and patient satisfaction (Case, 2011); and as a professional practice model (Moore & Rettig, 2014). Practice that includes the measurement of patient engagement in concert with patient navigation should be prioritized as a model of patient care.

Specific to this project and the facility, it is feasible that, from a practice perspective, the finding that an NNP increases levels of patient engagement can generate recommendations for changes and improvements to the newly implemented NNP. One recommendation is for the facility to incorporate patient engagement assessments when patients present for care that is more complex and associated with chronicity, an exacerbation of a health condition, and/or is deemed to have potential for barriers to care. This recommendation will allow earlier opportunities for intervention with patients who require services of the NNP and allow the nurse navigator to establish a partnership with the patient (and family). Having an established level of engagement early in the care delivery process allows for targeted, patient-centered, coordinated care that has been demonstrated to meet the needs of patients and to improve care outcomes (Freeman, 2013; Graffigna et al., 2012; May et al., 2014).

A second recommendation for future practice is the use of clinical guidelines specific to levels of engagement. The PHE model provides the explanatory foundation for use of the PHE-s and can be utilized to support and design clinical guidelines. Once a level of engagement is determined by the nurse navigator, guidelines can be used to establish plans of care in collaboration with the patient. Guidelines for each phase of engagement could be focused on meeting the needs of the patient while moving him or her through successive phases of engagement. This approach should provide a standardized baseline for care delivery while allowing individualization based on the needs of the patient.

Practice can include NNPs as a standard of care in care locations other than oncology, and patients should be assessed for levels of engagement as a component of initial intake assessments. This approach would serve to improve patient care outcomes as expressed by Freeman (2012, 2013) and Graffigna and Barello (2016). The leadership of the project’s facility, the physician champions, nurse navigators, and all practitioners who participate in care delivery would benefit from reading the outcome of this project because it provides insights regarding the newly implemented program and supports the necessity of the program. The leadership of the facility can engage in decision making regarding sustainment and/or expansion of the program to other care centers. In addition, consideration could be given to how other types of navigators could optimize the use of the highly skilled nurse navigators. It is important that the patient benefit from the findings of this project because changes made based on findings will directly influence care delivered and patient outcomes. These findings inform both the facility's concerns regarding meeting SAIL benchmarks and nursing and health care.

Summary

This DPI project achieved the stated purpose: to measure and describe the impact of the implementation of a nurse navigation program on patient engagement, a precursor to quality patient care outcomes. The results of data analysis demonstrated statistically significant changes in levels of patient engagement from pre- to post-implementation of the NNP. I opine that, as national and international health care systems search for answers to delivering coordinated, patient-centered care, improving patient engagement, and improving outcomes, models of care such as NNPs can be employed.

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Appendix A

Institutional Review Board Approval Letter

3300 West Camelback Road, Phoenix Arizona 85017   602.639.7500   Toll Free 800.800.9776
www.gcu.edu

DATE: March 28, 2017

TO: Frances Janice Nickie-Green, MSN, MPS, BSN, BS, AAS
FROM: Grand Canyon University Institutional Review Board

STUDY TITLE: [1044426-1] The Impact of a Nurse Navigation Program on Patient Engagement
IRB REFERENCE #:
SUBMISSION TYPE: New Project

ACTION:
A
PPROVED APPROVAL
DATE:
EXPIRATION DATE:
REVIEW TYPE:

REVIEW CATEGORY: Expedited review category # *[7.7]*

Thank you for your submission of New Project materials for this research study. Grand Canyon University Institutional Review Board has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form.

Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this

office. Please note that all research records must be retained for a minimum of three years.

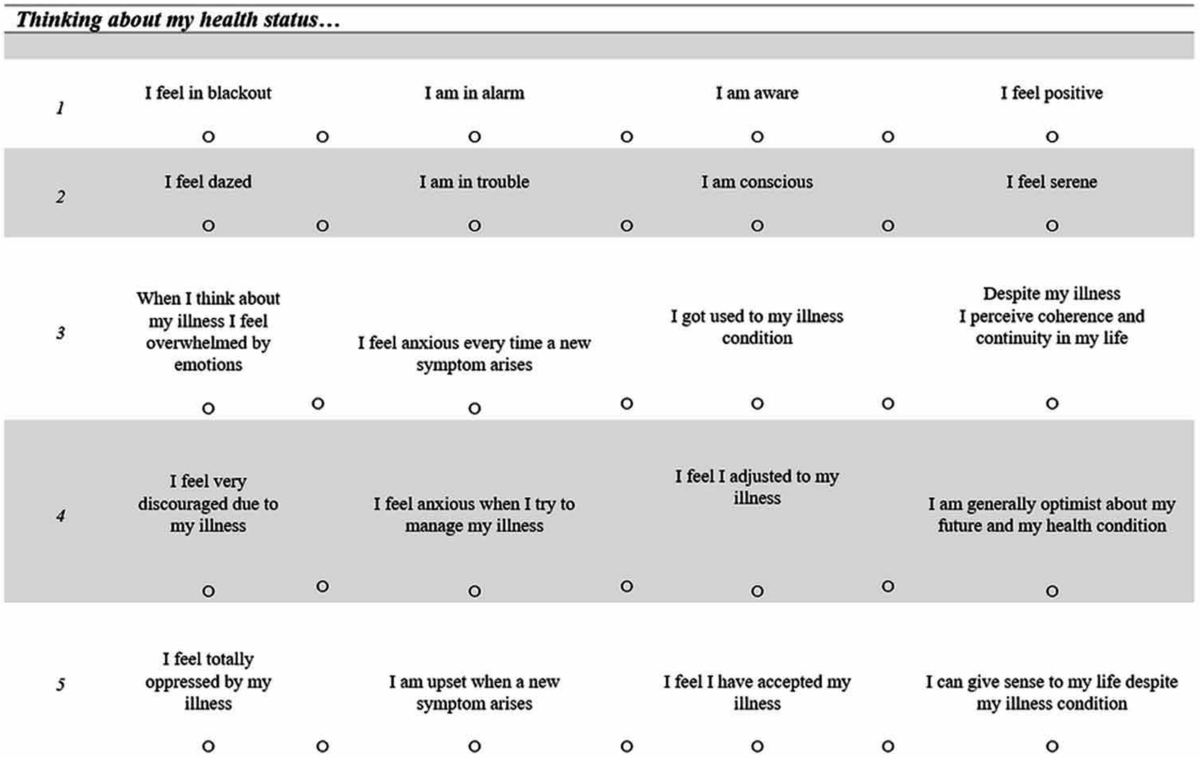
Based on the risks, this project requires Continuing Review by this office on an annual basis. Please use the appropriate renewal forms for this procedure.

If you have any questions, please contact Cathrine Ames at (602) 639-6460 or cathrine.ames@gcu.edu. Please include your study title and reference number in all correspondence with this office.

cc:

Appendix B

The Patient Health Engagement Scale (PHE-s) and Permissions

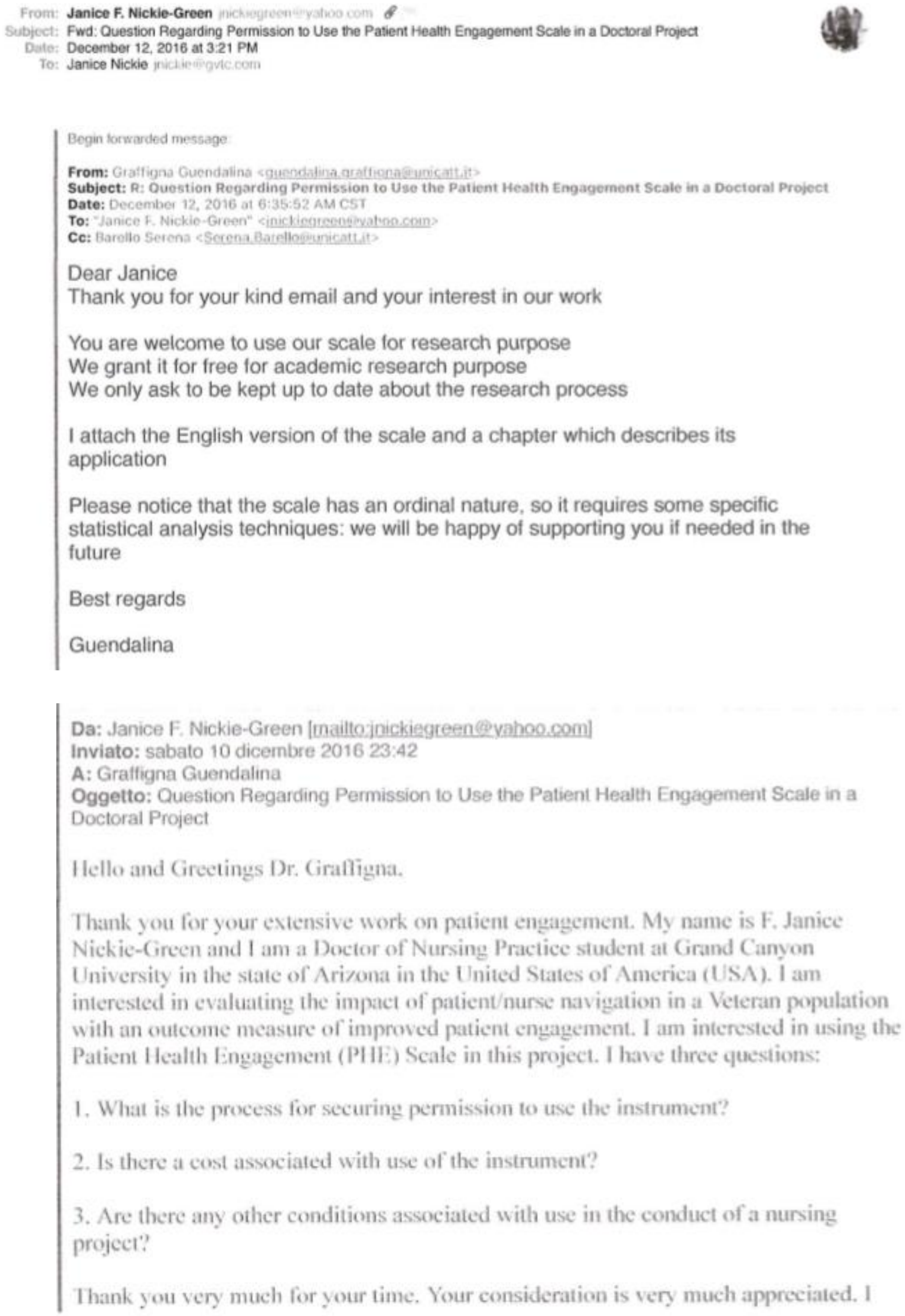


Thinking about my health status…

1	I feel in blackout		I am in alarm		I am aware		I feel positive
	○	○	○	○	○	○	○
2	I feel dazed		I am in trouble		I am conscious		I feel serene
	○	○	○	○	○	○	○
3	When I think about my illness I feel overwhelmed by emotions		I feel anxious every time a new symptom arises		I got used to my illness condition		Despite my illness I perceive coherence and continuity in my life
	○	○	○	○	○	○	○
4	I feel very discouraged due to my illness		I feel anxious when I try to manage my illness		I feel I adjusted to my illness		I am generally optimist about my future and my health condition
	○	○	○	○	○	○	○
5	I feel totally oppressed by my illness		I am upset when a new symptom arises		I feel I have accepted my illness		I can give sense to my life despite my illness condition
	○	○	○	○	○	○	○

(Graffigna, Barello, Bonanomi, & Lozza, 2015)

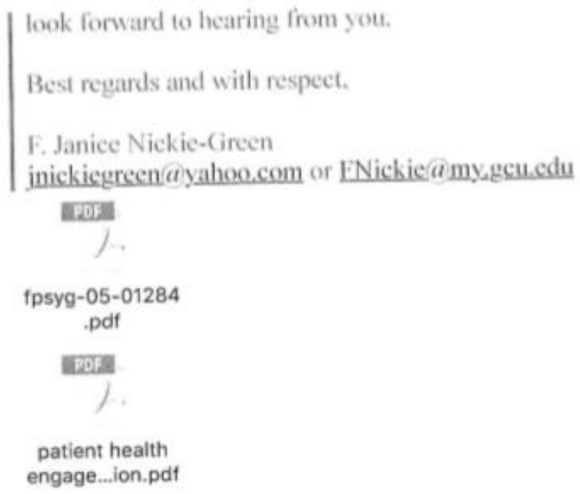
Permission for the Scale



From: **Janice F. Nickie-Green** jnickiegreen@yahoo.com
Subject: Fwd: Question Regarding Permission to Use the Patient Health Engagement Scale in a Doctoral Project
Date: December 12, 2016 at 3:21 PM
To: Janice Nickie jnickie@gvtc.com

> Begin forwarded message:
>
> **From:** Graffigna Guendalina <guendalina.graffigna@unicatt.it>
> **Subject:** R: Question Regarding Permission to Use the Patient Health Engagement Scale in a Doctoral Project
> **Date:** December 12, 2016 at 6:35:52 AM CST
> **To:** "Janice F. Nickie-Green" <jnickiegreen@yahoo.com>
> **Cc:** Barello Serena <Serena.Barello@unicatt.it>
>
> Dear Janice
> Thank you for your kind email and your interest in our work
>
> You are welcome to use our scale for research purpose
> We grant it for free for academic research purpose
> We only ask to be kept up to date about the research process
>
> I attach the English version of the scale and a chapter which describes its application
>
> Please notice that the scale has an ordinal nature, so it requires some specific statistical analysis techniques: we will be happy of supporting you if needed in the future
>
> Best regards
>
> Guendalina

> **Da:** Janice F. Nickie-Green [mailto:jnickiegreen@yahoo.com]
> **Inviato:** sabato 10 dicembre 2016 23:42
> **A:** Graffigna Guendalina
> **Oggetto:** Question Regarding Permission to Use the Patient Health Engagement Scale in a Doctoral Project
>
> Hello and Greetings Dr. Graffigna.
>
> Thank you for your extensive work on patient engagement. My name is F. Janice Nickie-Green and I am a Doctor of Nursing Practice student at Grand Canyon University in the state of Arizona in the United States of America (USA). I am interested in evaluating the impact of patient/nurse navigation in a Veteran population with an outcome measure of improved patient engagement. I am interested in using the Patient Health Engagement (PHE) Scale in this project. I have three questions:
>
> 1. What is the process for securing permission to use the instrument?
>
> 2. Is there a cost associated with use of the instrument?
>
> 3. Are there any other conditions associated with use in the conduct of a nursing project?
>
> Thank you very much for your time. Your consideration is very much appreciated. I



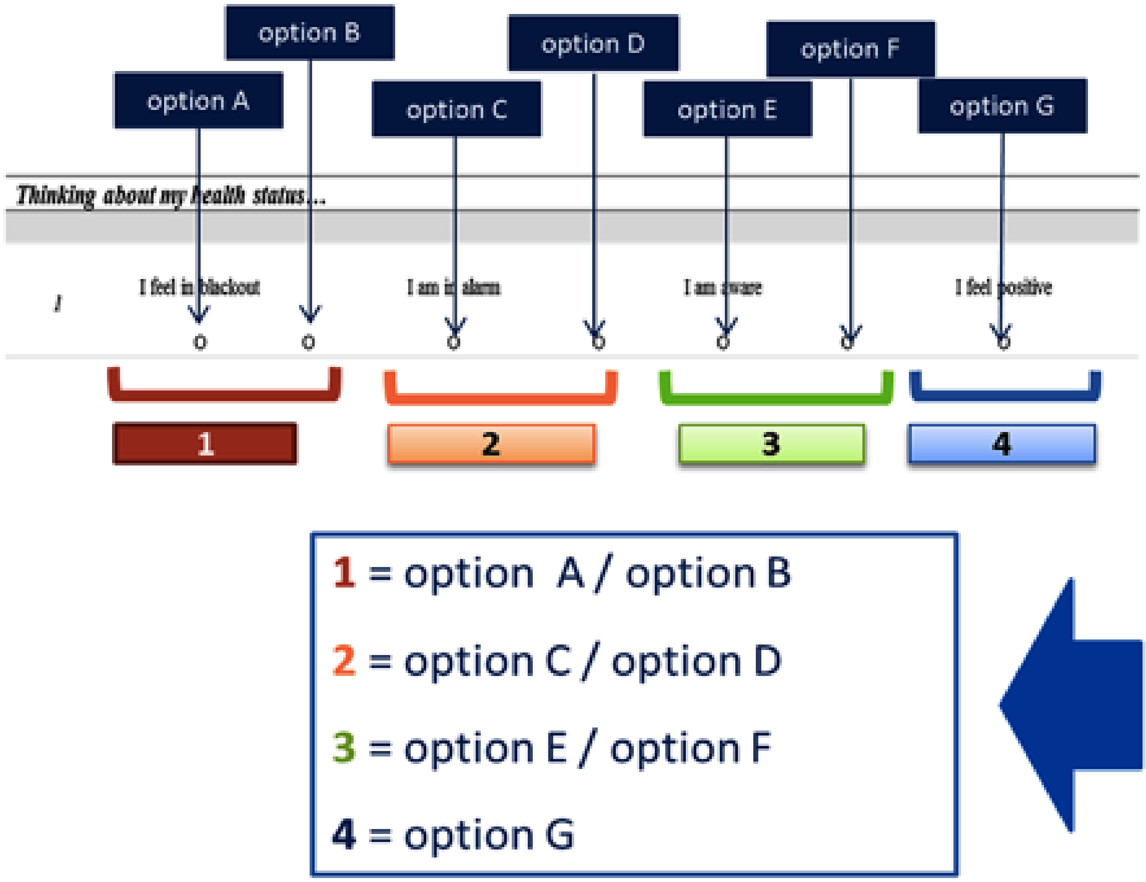
look forward to hearing from you.

Best regards and with respect,

F. Janice Nickie-Green
jnickiegreen@yahoo.com or FNickie@my.gcu.edu

Appendix C

The Patient Health Engagement Conversion Table for Score Calculation



1 = option A / option B

2 = option C / option D

3 = option E / option F

4 = option G

(Graffigna & Barello, 2016)