DEVELOPMENT AND TESTING OF AN INSTRUMENT TO MEASURE HOLISTIC
ATTRIBUTES OF NURSE PRACTITIONER CARE

by

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This dissertation was prepared under the direction of the candidate’s dissertation advisor, Dr. Bernadette Lange, the Christine E. Lynn College of Nursing, and has been approved by the members of her supervisory committee. It was submitted to the faculty of the Christine E. Lynn College of Nursing and was accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

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With passage of the Patient Protection and Affordable Care Act (PPACA) and the publication of the Institute of Medicine’s report on the future of nursing, nurses are slated to take on an expanded role in primary healthcare delivery in the near future. Nurse practitioners, in particular, will be instrumental in filling the gap in primary care availability engendered by the increasing specialization of physician practice and increased access to healthcare made possible by the provisions of the PPACA.

The need for this study was identified through gaps in the literature related to nurse practitioner practice; specifically, the paucity of quantitative research regarding patients’ perspectives of core holistic nursing values in nurse practitioner care, and, since nursing care is by definition and tradition holistic in nature, this inquiry attempted to quantify the degree to which nurse practitioner care upholds and preserves core holistic nursing values.
This quantitative, descriptive study used a convenience sample of adults who had experience in being cared for by a nurse practitioner. Middle-range theories contributing to the development of a measure of holistic care in Nurse Practitioner practice were Shuler’s nurse practitioner practice model and Swanson’s theory of caring. The instruments used in this study were the newly-created Nurse Practitioner Holistic Caring Instrument (NPHCI) and Swanson’s Caring Professional Scale (CPS), an instrument designed to evaluate caring in nurse-patient interactions. Preliminary psychometric analysis of the NPHCI included content, construct, and predictive validity, and reliability estimates.

Results suggested that nurse practitioners provide patient-centered, comprehensive and clinically competent patient care, rendering them ideally suited to lead primary care delivery. The NPHCI and its subscales showed quite high estimates of reliability, and correlations between the NPHCI and the CPS were high, indicating that the constructs of perceived support, respect, and patient-centeredness in the CPS corresponded well with the underlying constructs of the NPHCI.

Nurse practitioners, with their advanced education in diagnosing and treating health conditions, their ability to deliver safe, effective, and economical care, and their attention to the preservation of core holistic nursing values, demonstrate great potential for expanding, enhancing, and transforming primary healthcare delivery in the United States.
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CHAPTER 1. INTRODUCTION

Healthcare delivery in the United States is undergoing tremendous changes. Passage and implementation of the Patient Protection and Affordable Care Act (PPACA) (2010), the broadest health care overhaul since the 1965 creation of the Medicare and Medicaid programs, is designed to make primary and preventive care more accessible and affordable to Americans, especially those in previously underserved (indigent), marginalized (unemployed), and newly uninsured (displaced) American populations (Kaiser Family Foundation, 2013). It is estimated that 95 percent of Americans, including 32 million previously uninsured persons, will be covered under the provisions of the PPACA by 2019 (U. S. Department of Health and Human Services, 2010), and that the U.S. will face a shortage of 35,000 to 44,000 primary care physicians during and beyond that same time period (American College of Physicians, 2010). For more than a decade, there has been reduced interest in primary care practice among new medical graduates, and the Health Resources Services Administration now identifies 55 million people as residing in Primary Care Health Professional Shortage Areas (Health Affairs, 2012).

Primary care is defined by the Institute of Medicine (IOM, 2010) as the provision of integrated, accessible health care services by clinicians who address personal health care needs, develop a sustained partnership with patients, and practice in the context of family and community. Primary care involves the diagnosis and treatment of acute conditions, management of chronic diseases, and the provision of illness prevention services. Indeed, regular access to primary health care has been associated with lower
mortality and reduction in emergency department visits and hospitalizations (Health Affairs, 2012).

With passage of the PPACA (2010) and the publication of the IOM’s (2010) report, nurses are slated to take on an expanded role in primary healthcare delivery in the near future. Nurse practitioners, in particular, will be instrumental in filling the gap in primary care availability engendered by the increasing specialization of physician practice and increased access to healthcare made possible by the provisions of the PPACA. The IOM (2010) cites nurses’ steadfast commitment to patient care, improved safety and quality, and better outcomes as making them ideally suited to delivering high-quality, safe and equitable patient care, and for assuming a leadership role in redesigning the healthcare system (pp. xi-xii). Key recommendations from the report call for nurses to be allowed to practice to the fullest extent of their education, to be recognized as full partners with physicians and other healthcare professionals in reforming care delivery, and to expand research and improve data collection, in order to identify best practices and ensure better quality healthcare.

In view of the nurse practitioners’ projected increase in responsibility for a large portion of primary care delivery in the U.S., the aim of this study is to examine the patient’s perception of the nature of the nurse practitioner’s care, specifically the preservation of core values of holistic care, and to describe the development and testing of a new instrument designed to measure the holistic quality of the nurse practitioner’s care.

**Background**

Nurse practitioners (NP) are registered nurses who have advanced postgraduate
education in health assessment, pharmacology, pathophysiology, nursing philosophy, research, theory, and public policy, as well as in the diagnosis and treatment of chronic, acute, and specialized health concerns in patients of all ages. The Nurse Practitioner approach to care is therefore unique, encompassing nursing expertise and scholarship, in addition to the knowledge and skills traditionally associated with medicine.

Currently, there are over 250,000 advanced practice nurses licensed nationwide, of which more than 180,000 are nurse practitioners (Appleby, 2013; Pearson Report, 2011). Nurse practitioners are willing and able to fill the gap in primary care access, and historically, research has shown that nurse practitioners provide safe, cost-effective and high-quality care (Congressional Budget Office, 1979; Office of Technology Assessment, 1986; Safriet, 1992; Spitzer et al., 1974). More current evidence suggests that patients who see NPs experience higher satisfaction with their care, and report better screening, follow-up and counseling than that received from physicians (Avorn, Everitt, & Baker, 1991; Dierick-van Daele, Metsemakers, Derckx, Spreeuwenberg, & Vrijhoef, 2009; Durie, Leese, Roberts, Roland, & Venning, 2000; Horrocks, Anderson, & Salisbury, 2002; Litaker, Mion, Planavsky, Kippes, Mehta, & Frolikis, 2003; Miranda et al., 2008; Newhouse et al., 2011; Prescott & Driscoll, 1980). And because nurse practitioners are nurses, their care is grounded in and influenced by core holistic nursing values.

From the earliest years of its formal history, nursing has favored a holistic approach to patient care. Indeed, as Lang and Krejci (1991) attest, “the phrase ‘holistic nursing’ is redundant. Whether nursing is defined by the [ANA] Social Policy Statement, Nightingale, or Rogers, it is holistic or it is not nursing” (p. 16).
The defining characteristics of holistic nursing care, however, have evolved subtly. Nightingale (1992) considered illness as a state of disequilibrium and healing as a natural process, strongly influenced by a patient’s environment. By the turn of the 20th century, this view had expanded to public health nursing, and although the term ‘holistic’ was not yet used, nurses continued to promote health using a holistic approach, considering the effects of the physical, social, and community environments in patients’ lives and their effects on health (Boschma, 1994). In the latter half of the 20th century, nursing theorists (Orlando, 1961; Peplau, 1952) had begun to include concepts from psychology and sociology relating to the dynamics of interpersonal relationships in care theories, and models emerged which were individualized, comprehensive, and patient- and relationship-centered. Social consciousness, planetary stewardship, dissatisfaction with the effects of industrialization and technology, and interest in new age and Eastern philosophies and spiritual beliefs contributed to the conceptualization of a holistic focus in health and healing which embraced the unity of mankind and the interconnectedness of mind, body, and spirit. The counterculture of the 1960s was especially influential in bringing what are now termed complementary and alternative modalities (CAM) such as meditation, yoga, acupuncture, herbal remedies, and relaxation techniques into the public discourse. The concepts of patient- and relationship-centered care, the interconnectedness of the mind and body, and the healing potential of alternative therapies began to define a holistic framework for nursing (Boschma, 1994).

Thus, nursing has a tradition of providing care from a holistic focus. Little is known, however, about the preservation of core nursing values in advanced nursing care; specifically, in the primary care practice of nurse practitioners. Exploring the patient’s
perception of the preservation of holistic nursing values in nurse practitioners’ care may therefore be of critical importance to healthcare consumers, providers, educators, policymakers and underwriters, as primary care delivery evolves with nurse practitioners as key providers.

**Significance**

This study will explore the development and testing of a new instrument designed to measure the holistic attributes of nurse practitioner care, an endeavor which may have important implications for the nurse practitioner’s delivery of patient- and relationship-centered, comprehensive, and innovative care.

**Relationship-centered Care**

The nurse’s relationship with patients constitutes the foundation for therapeutic interactions and healing activities. A relationship that focuses on the patient’s experience of health and illness, and seeks to understand and honor the patient’s priorities in healing is an integral component of holistic nursing care (Dossey, 2009). Patient preference for a relationship-centered approach to care is well documented (Luxford, Safran, & Delbanco, 2011; McQueen, 2000; Miller & Apker, 2002; Tresolini, 1994; Watson & Foster, 2003); such an approach is characterized by a conscious and intentional shift toward caring and healing relationships and modalities, communication patterns, and authentic relationships (Moore & Hanson, 2009). These qualities mirror a holistic focus in care delivery, and patient preference for care which honors these qualities is an important impetus for exploring its advantages.

**Comprehensive care**

Advances in medical science have enabled people to live longer, and this increase
in longevity has brought with it an increase in the number of individuals living with chronic illnesses (Volland, Schraeder, Shelton, & Hess, 2012). Chronic illness presents significant challenges in care management, as the needs of patients with chronic conditions are often complex, and may be addressed by numerous healthcare providers. Patient care is therefore often fragmented, incomplete and inefficient, leading to unnecessary hospitalizations, increased use of emergency facilities, polypharmacy, and conflicting plans of care (Volland et al., 2012). Comprehensive care is aimed at coordinating and improving the way care is delivered, with the goal of improving health outcomes and quality of life. Holistic nursing care is comprehensive in that it takes into account the patient’s physical, emotional, social, spiritual and psychological well-being in planning and facilitating care, and includes the consideration and use of CAM if desired and/or indicated. And, while the use of CAM is not necessarily a defining attribute of holistic nursing care, such therapies may be proposed and utilized by patients and providers as avenues to healing and as adjuncts to conventional medical treatment.

**Complementary and Alternative Modalities**

Public interest in CAM has increased in recent years. The American Hospital Association (AHA), in partnership with the Samuei Institute (2010), reports that holistic therapies used in conjunction with or as alternatives to conventional medical therapies (pharmaceuticals, invasive procedures, etc.) are becoming more popular across the United States. Their most recent survey indicates that approximately 38% of all Americans use therapies such as meditation, massage, yoga, and natural products (including herbal preparations) for a variety of chronic conditions, including musculoskeletal pain, migraines, arthritis, anxiety and depression, and high cholesterol.
In addition, and largely in response to consumer demand, hospitals offer these therapies to patients as part of their care. In fact, many patients (43%) report that they prefer holistic therapies over conventional medical approaches, more than 10% say that they prefer to see a healthcare practitioner who would consider using them, and 69% pay for CAM therapies out-of-pocket (Samueli Institute, 2010, p. 6).

According to the National Center for Complementary and Alternative Medicine (NCCAM, 2011), most patients who seek complementary or alternative therapies pay for them out-of-pocket, since many of these therapies are not reimbursable by insurance. This means that access to holistic therapies and providers is largely limited to those who have disposable income. The NCCAM cites the lack of scientific evidence for the cost-effectiveness and efficacy of such treatments in treating and relieving the effects of stress-related and chronic health conditions as a factor in the insurance industry’s reluctance to underwrite such practices.

**Policy and Reimbursement**

The question of legitimation of holistic care and practices for purposes of reimbursement and policy creation has highlighted the need for studies which show the effectiveness and value of holistic care, and for correlating holistic nursing care with positive health outcomes; gauging the degree to which nurses use a holistic, patient-centered and comprehensive approach should constitute the first step in this endeavor. A better understanding of the holistic attributes of care provided by nurse practitioners may be instrumental in increasing public awareness of the value and significance of their practice. In addition, exploration of NP care may help meet the expectation and desire
that patients have expressed for care that is tailored to the individual and which takes into consideration all areas of their lives.

Summary

With publication of the Institute of Medicine’s (IOM, 2010) recommendations for the future of nursing, and passage of the Patient Protection and Affordable Care Act (PPACA, 2010), nursing continues to broaden its practice boundaries and more clearly articulate its perspective. The expansion of nurse practitioners’ responsibility in delivering comprehensive, safe and cost-effective primary care, the recognition of the importance of relationship-centered care, and the need for evidence-based legitimation of nursing care and practices to insurance companies, policy-makers, healthcare providers, and patients highlight the need to examine the holistic properties of nurse practitioner’s care.

Purpose

The purpose of this quantitative study is to explore the development and testing of a new, investigator-developed instrument designed to measure patients’ perceptions of the holistic quality of nurse practitioner care, and to describe findings from its use in a sample population.

Research questions addressed in this study are:

1. How reliable and valid is the Nurse Practitioner Holistic Caring Instrument (NPHCI)?
2. To what degree is Nurse Practitioner care holistic, as perceived by patients and as measured by the NPHCI?
Assumptions

The assumptions guiding this study are:

• Holism is the view that, in living systems, parts are intimately interconnected with the whole, and cannot exist or be understood without reference to the whole.

• Nursing care is, by tradition and definition, holistic in nature.

• Core holistic nursing values are wholeness of persons, authentic presence in relationship with patients, and the facilitation of healing.

• As nurses, nurse practitioners ground their care in holistic nursing values.

Definitions

For the purposes of this study, terms are defined as follows.

Core holistic nursing values. Wholeness of persons encompasses the physical, emotional, mental, spiritual and social aspects of patients’ lives. Authentic presence is exemplified by the NP engaging with, listening to, and focusing on what matters most to the client when planning care. Facilitation of healing is co-creating a plan of care in collaboration with the client, with particular attention to the promotion of self-care activities, and the consideration of, and support for, the use of alternative healing therapies by the client, if desired.

Holistic nursing care. Holistic nursing care is comprehensively defined for this study as developing a relationship with patients in which the nurse honors and promotes consideration of the wholeness of persons, authentic presence, and facilitation of healing, while incorporating the physical, emotional, spiritual, social and psychological aspects of
the patient’s existence in supporting, guiding and assisting patients in gaining self-knowledge and in co-creating a plan of care.

These definitions served as a guide in the development of an instrument to measure the elements of a holistic perspective in nurse practitioner care.

**Theoretical Framework**

Middle-range theories contributing to the development of a measure of holistic care in NP practice are Shuler’s (1991) nurse practitioner practice model and Swanson’s (1991) theory of caring.

The Shuler nurse practitioner practice model assists nurse practitioners in illuminating their “vital and unique role in health care delivery,” an approach which emphasizes whole person care (Shuler & Huebscher, 1998, p. 492). Nurse practitioner practice is described in the model as assessing patients from a holistic perspective, developing a mutually-agreeable, self-care-oriented treatment plan, considering non-pharmacological treatments including alternative healing practices, functioning within a multidisciplinary team, and enhancing the patient’s movement towards improved wellness.

Swanson’s (1991) theory of caring, which is the basis for her Professional Caring Scale, defines caring as “a nurturing way of relating to a valued other toward whom one feels a personal sense of commitment and responsibility” (p. 162). This theory has as its central concepts knowing, being with, doing for, enabling, and maintaining belief. Swanson defines knowing as “striving to understand an event as it has meaning in the life of another,” being with as being “emotionally present” to the other, doing for as attending to the physical condition and needs of the other, enabling as “facilitating the other’s
ability to grow, heal, and practice self-care,” and maintaining belief as “seeking to assist clients to attain, maintain or regain meaning in their experiences of health and illness” (p. 162).

The theoretical concepts described in these models support the attributes of authentic presence, attention to the wholeness of persons, and facilitation of healing, which are fundamental to holistic nursing care (Mariano, 2009) and which constitute the theoretical basis for a measure of patients’ perception of holistic nursing care in NP practice.
CHAPTER 2. LITERATURE REVIEW

There is a considerable body of literature describing the nurse practitioner (NP) in various practice settings (Brown & Waybrant, 1987; Bush & Watters, 2001; Cooper, Henderson & Dietrich, 1998; Cronenwett et al., 2009; Davies, Bickell, & Tibby, 2011; Donald et al., 2013; Jones, 2005; Knaus, Davis, Burton, Felten, & Fobes, 1996; Kotzer, 2005; Larsen, Mandeleco, Williams, & Tiedeman, 2006; Lukacs, 1982; Sipe, Fullerton, & Schuiling, 2009; Sox, 1979; Wallerstedt, Sangare, Bartlett, & Mahoney, 2009) and in regards to the safety (Congressional Budget Office, 1979), cost-effectiveness (Safriet, 1992), and value (Office of Technology Assessment, 1986; Spitzer et al., 1974) of nurse practitioners’ care; however, there is little considering how nurse practitioners (and their patients) perceive the nurse practitioner’s care from a holistic perspective, and how a holistic educational framework influences and affects the care they deliver.

This chapter will first address studies detailing the safety and value of NP practice. Discussion then turns to the holistic attributes of NP practice from practitioner, patient, and faculty/student perspectives, and concludes with the identification and description of the sole existing instrument measuring holistic nursing care.

Early studies of NP practice suggest that patient physical status and satisfaction were found to be comparable between physician and nurse practitioner participants. Over a period of one year, Spitzer et al. (1974) conducted a randomized controlled trial at an Ontario family medical practice setting, where they assessed the effect of substituting nurse practitioners for two family physicians in providing care. The health status of
patients who received care from the physicians was compared to the status of those who received care from nurse practitioners. No differences were found in physical functional capacity, social function or emotional capacity. In addition, the quality of care was reported to be similar, and satisfaction was high among both patients and professional personnel. The use of nurse practitioners was not found to be cost-effective in the practice setting, however, due to reimbursement restrictions for nurse practitioner services. Similarly, the Congressional Budget Office (1979) reviewed the findings of NP performance in a variety of settings and found that NPs performed as well as physicians in patient outcomes, diagnoses, and satisfaction with care.

Later studies such as Safriet (1992) found NP care to be cost-effective and in some instances of higher quality than their physician counterparts. In reviewing NP performance in regards to productivity, prescribing, and patient satisfaction, Safriet’s results suggested that advanced practice nurses are “proven providers” and that “removing barriers to their practice will only increase their ability to respond to the pressing need for basic health care in our country” (p. 487). In addition, a government study concluded that malpractice rates and premiums supported patient satisfaction with NP care, and that malpractice suits against NPs remained extremely rare (Office of Technology Assessment, 1986, p. 19).

Avorn et al. (1991) examined a random sample of 501 physicians and 298 nurse practitioners who were given a clinical vignette describing abdominal pain and were asked to make diagnostic and treatment recommendations. More than one third of physicians chose to initiate therapy without pursuing patient history, and nearly half recommended a prescription as the most effective treatment. In contrast, only 19% of
nurse practitioners were prepared to treat without exploring relevant history, including psychological stressors. Furthermore, the nurse practitioners asked nearly twice as many questions and only 20% recommended a prescription.

These and other studies testify to the safety, quality and effectiveness of NP practice, but fail to address the incorporation of core nursing values, specifically those of holistic nursing care, in their practice.

**Holistic Attributes of Nurse Practitioner Practice**

**Practitioner Perspective**

In exploring how practicing NPs utilize holistic principles in care delivery, Donnelly (2006) used a qualitative interpretive phenomenological approach with conversational interviews of eight Advanced Practice Nurses. The research question guiding the study was “What is the lived experience of working as an advanced practice nurse in the clinical context to provide holistic patient care?” Findings revealed three overarching themes identified by NPs in clinical practice: maintaining commitment to the development of nursing practice, grounding practice in nursing values and perspectives, and using emerging evidence to guide practice. Nursing values and perspectives identified as grounding Advanced Nursing practice included patient advocacy, holism, using nursing experience and theory in practice, and the challenge of incorporating medical functions into a nursing framework. These values and perspectives point to the holistic nature of the NP’s practice, and underscore the nurse practitioner’s focus on the wholeness of persons in delivering care.

Filej and Kaucic (2013) sought to investigate the understanding of holistic nursing practice among Nurse Practitioners and nurse technicians working in health care
institutions or residential care settings. A quantitative descriptive research design was employed, using a questionnaire. The convenience sample was composed of 77 predominantly female nurses and nurse technicians. All respondents agreed that the most important roles of a holistic Nurse Practitioner include listening to patients, ensuring patients’ privacy, and reducing patient anxiety. In addition, respondents (those with a university degree or higher) identified empowering patients in the healthcare context as defining patient care.

In another study, Strandberg, Ovhed, Borgquist, and Wilhelmsson (2007) explored how holism is perceived by doctors and nurses in their clinical work. The study method was qualitative, sampling 22 General Practitioners and 20 nurses; the two groups were interviewed separately using semi-structured interviews in a focus group format. Content analysis of data produced three themes or categories of responses to describe the concept of ‘holistic view’: attitude, knowledge, and circumstances. A holistic attitude was said to permeate the practitioners’ work— the words “whole” versus “parts of the whole” were used to express this idea. Tacit knowledge of a holistic viewpoint was described in relation to primary care of patients— “a spider in the web” was used to describe this understanding. The environment of primary care, or the circumstances surrounding the patients, necessitated a holistic view of care, according to practitioners— comments such as “a comprehensive view of a situation” articulated this view.

These studies emphasize the integration of holistic principles in Advanced Nursing practice, but in the case of Donnelly’s (2006) study, also acknowledge the difficulty in maintaining a nursing perspective while functioning in a medical model of care. A medical model of care is generally held to signify a mechanistic view of the body,
involving an unequal partnership in healing, with the physician assuming a paternalistic, often patronizing, attitude toward patient input in care decisions (Shah & Mountain, 2007). Such a model is in direct opposition to a holistic nursing perspective, where the nurse considers all aspects of a patient’s situation when providing care, merely facilitates the patient’s healing, and where patients are encouraged to participate in decision-making (Mariano, 2009).

**Patient Perspective**

Several studies addressing practice style and patient satisfaction with NP care found that NPs had better communication and interview skills than physicians, offered more advice and information, employed therapeutic listening, and were generally more supportive.

Williams (1997) assessed the relationship between patients’ perceptions of the dimensions of holistic nurse caring and satisfaction with nursing care, and whether selected patient variables significantly affected that relationship. The study design was a quantitative correlational one, using the Holistic Caring Inventory (C. L. Latham, 1988) and other surveys to measure holistic caring, pain, and patient satisfaction with nursing care. The research question was not specifically stated in the article, but the study addressed whether there is a relationship between patients’ perceptions of nurse caring and satisfaction with the nurse’s care. The sample was one of convenience, using 94 medical patients in two rural southeastern hospitals. Results suggested that holistic caring was evident to the subjects, that nurse caring was significantly related to the subjects’ satisfaction, and that the predictor variables of age, gender, and level of pain were not significant predictors of the relationship between caring and satisfaction.
C. P. Latham (1996) tested the effects of self-esteem and need for control while hospitalized, on perceptions of humanistic caring and support from nurses. In addition, the effects of these variables on coping strategy effectiveness and psychological distress were explored. A correlational study design was used to investigate the variables that contribute to positive coping outcomes following caring and support from nurses. A convenience sample of 120 acutely ill hospitalized patients was recruited from the medical units of two southwestern medical centers. Results showed that perception of caring from nurses is affected by self-esteem and need for control which, in turn, influence coping techniques and psychological distress. Interestingly, even moderate amounts of humanistic caring positively influenced coping effectiveness and perceptions of well-being.

From the perspective of both provider and patient, Covington (2005) examined the experience of caring presence within a therapeutic relationship. A hermeneutic phenomenological interview design was used. The research questions were “What is the experience of caring presence for persons with chronic illness who are receiving primary care from an NP?” and “What is the experience of caring presence for NPs giving care to persons with chronic illness?” The convenience samples were composed of NPs (four females and one male) from a small community clinical setting in the western U.S., and patients (nine females and one male) with chronic illness who had visited the NP for care. After identifying themes in the data, researchers posited that caring presence is a relationship between two people who share themselves through ways of being, behaving, and feeling. Three themes were identified: mutual trust and sharing, transcendent connectedness, and metaphysical experience.
Horrocks et al. (2002) conducted a systematic review of randomized trials to determine whether nurse practitioners provide care equivalent to physicians’ in a primary care setting. Results revealed that patients were more satisfied with nurse practitioners care; NPs had longer consultations, and investigated problems more thoroughly than did physicians. No difference in health status, prescriptions or referrals was found, and quality of care was, in some instances, better in the nurse practitioner encounters.

In describing the findings of selected comparison evaluation studies, Prescott and Driscoll (1980) reported that nurse practitioners received higher scores on amount and depth of discussion with patients, preventive health, amount of advice, therapeutic listening and support, completeness of history, follow-up on problems and therapies, completeness of physical examination, and quality of interviewing skills.

In contrast, Lawson (2002) investigated Nurse Practitioner (NP) and physician communication styles and their relationship to perceived support for autonomy, and patient satisfaction, within the context of established provider-patient relationships. The study used a descriptive correlational design, in which provider-patient interactions were audiotaped and rated according to the Provider Communication Style Rating Scale, an instrument developed for the study. Patient participants completed the Health Care Climate Questionnaire and the Patient Satisfaction Questionnaire. The research question addressed whether the practitioner’s predominant communication style was informational or controlling and whether style affected patient satisfaction and perceived support of autonomy. There were two convenience samples- providers and patients. The providers were five female NPs and four medical residents (physicians) of which three were male and one female. The 124 patients recruited for the study were predominantly white
females. The study results showed that, on all communication characteristics, physicians were rated more informational and NPs were more likely to impede patient communication and more likely to use interviewing techniques that did not foster patient participation. Additionally, provider communication styles were not correlated with patient satisfaction or patient-perceived autonomy support.

Exploring patient satisfaction with communication, listening and support in the NP’s approach to care illustrates the changing nature of research into care delivery styles of NPs, and begins to highlight the presence and value of holistic attributes in NP practice.

Education

There has been some recent exploration of the incorporation of holistic nursing attributes and principles in NP education and practice. Brykczyński’s (2012) study addressed how NP faculty incorporate holistic nursing dimensions into teaching/learning experiences in NP programs (p. 554), and identified imparting the importance of a holistic focus in care as a primary concern in educating NP students. The study used a qualitative interpretive phenomenological method, sampling 24 experienced Nurse Practitioner faculty members (22 women and two men) via face-to-face or telephone interviews. Results suggest that the most common approaches for teaching holistic nursing dimensions of NP practice were role modeling and sharing narratives of actual cases. Major themes identified from the narrative data included teaching with a holistic focus, the idea that healing begins with listening, identifying health within illness, involving families in care, fostering nonjudgmental acceptance of choices,
comprehensive management of complex situations, and encouraging leadership for 
change.

In another educational study, Carbogim, Friedrich, Soares, and Castro (2013) 
analyzed the meaning of holistic care in the teaching process. The research design was 
described as a “qualitative case study” using semi-structured individual interviews with 
two groups-11 nursing professors and 12 undergraduate nursing students from a public 
nursing college in Brazil. In the reported results, both groups described holism in nursing 
care as using a multidimensional approach with meanings that go beyond purely 
biological matters. In addition, both groups recognized holistic care as an interactive 
process that permits human development, but as being permeated by the biomedical 
model that operates on pathologies rather than on holistic principles. Regarding nursing 
education, both groups described faculty specialization as contributing to the 
fragmentation of knowledge, and holism as more an ideal than an actual practice.

Downey (2007) explored the impact of an elective undergraduate course in 
holistic nursing on nursing students’ personal and professional health care practice, 
learned perceptions of holistic concepts of self-care, and application of holistic nursing 
interventions in personal and professional practice. A mixed method design was used, 
consisting of a Likert-type three-item survey with space provided for qualitative/free text 
comments. The researcher hypothesized that “teaching holistic nursing concepts to 
undergraduate and registered nursing students creates an expansion of consciousness and 
awareness for participants in the course” (Downey, 2007, p. 119). The purposive sample 
consisted of 96 course participants who had completed the holistic nursing elective, and 
the study was conducted over a period of seven years. Quantitative (survey) results
revealed that an overwhelming majority of respondents (>80%) indicated that the course positively influenced their personal and professional practice via a shift in awareness. Themes identified in the (qualitative) comments included positive use of self-care therapies, awareness of complementary therapies for improved health, and application of relaxation techniques in personal and professional roles. Fewer than 5% of respondents reported that nothing had changed in their practices.

These studies reveal that faculty members are actively engaged in promoting awareness of holistic principles in educating nurses, and that, in Downey’s (2007) study, students strive to incorporate these principles into their daily lives and professional practice. Carbogim et al. (2013), however, note that faculty specialization contributes to the fragmentation of knowledge of holistic principles, and that holism is viewed more as an ideal than an actual practice.

**Summary and Gaps in Literature**

While these studies suggest that Nurse Practitioner faculty incorporate holistic principles in NP education, and Nurse Practitioners report the use of these principles in their practice, responses from patients regarding the degree to which they perceive NP care as holistic are mixed, and largely limited to reports of outcomes, satisfaction, and interaction style. Further study of patient perceptions of holistic NP care is therefore indicated, since these studies utilized relatively small, predominantly female samples from (in many cases) single practice settings, and may not be representative of other populations or settings. In addition, the majority of studies did not conceptually define holism or a holistic approach in nursing care, an omission that will be addressed in this study.
Existing Instrument

Measures designed specifically to evaluate the holistic quality of nurse-patient encounters are somewhat scarce. There are many scales designed to measure caring in nurse-patient interactions (Watson, 2009), as well as scales designed to measure individual components of holistic care, such as physical and emotional well-being (Giasson & Bouchard, 1998), spiritual needs (Galek, Flannelly, Vane, & Galek, 2005), empathy (Mercer & Reynolds, 2002), relationship (Simmons, Roberge, Kendrick, & Richards, 1995), personal support (Brandt & Weinert, 1981), and compassion (Burnell & Agan, 2013). And, while these measures certainly incorporate some features of holistic care, they do not adequately or completely operationalize all the components of a holistic focus in nursing care, or in nurse practitioner practice. There is currently only one comprehensive measure of patients’ perception of holistic nursing care, the Holistic Caring Inventory (C. L. Latham, 1988). And, while the Holistic Caring Inventory (HCI) is a theoretically-sound, valid and reliable scale, and addresses some aspects of holistic nursing care, it does not completely reflect those attributes which have come to define a holistic approach in promoting health and healing (Mariano, 2009).

The Holistic Caring Inventory

The HCI was developed to measure patients’ perceptions of nurse caring; specifically, humanistic caring from a holistic nursing perspective. According to Howard (1975), humanistic caring encompasses the principles of inherent worth, individuality, the consideration of the entirety of a person’s existence rather than a specific problem, freedom of choice, status equality, shared decision-making, empathy, and emotional connectedness. Using Howard’s theoretical model as a guide, holistic nurse caring in the
HCI explores the social, physical, mental and spiritual domains of nursing care in four subscales: physical caring, interpretive caring, spiritual caring, and sensitive caring.

C. L. Latham’s (1988) Holistic Caring Inventory (originally named the Holistic Caring Instrument), is a 39-item summated, Likert-type scale designed to measure an individual’s “preference for being cared for in a holistic sense” (p. 64). The HCI considers care that addresses the whole person, including physical, psychological, sociocultural, and spiritual realms of existence. The theoretical foundation for the HCI is “humanistic caring from a holistic perspective,” and the scale includes items designed to measure “personal outlook on life, adaptability, need for nurturance, and need for contemplation” (Watson, 2009, pp. 176-177).

**Analysis of subscale content.** Physical caring in the HCI refers to caring for the patient’s physical condition or needs, and is addressed by exploring discussion of and adjustment to physical problems, and although the HCI does consider how physical conditions may affect other areas of the patient’s life, it does not explicitly consider how patterning of life events and choices may be influencing a physical condition.

Interpretive caring items in the HCI reflect the nurse’s ability to recognize and consider patient feelings in providing information and care; these items are mainly centered on acknowledgment of the patient’s feelings and on how the patient’s condition may affect personal relationships and circumstances in the patient’s life, such as work. These items do not, however, address the pursuit of conscious awareness of the interconnectedness of mind and body, the exploration of pattern recognition in emotion-laden life events, or how exploring feelings may assist in gaining self-knowledge. Spiritual caring in the HCI covers such topics as the nurse’s ability to recognize and assist the patient in obtaining
spiritual guidance, but items do not specifically explore the nurse’s discussion of a patient’s spiritual needs or their search for meaning in life. Items relating to *sensitive caring* involve perception of the nurse’s behavior: listening, showing concern, discussing, and reacting to patient feelings. These items do address empathic or compassionate support for the patient, but do not explore the patient’s perception of the nurse’s intentional presence or support for patient input in care decisions, especially when those decisions do not follow a conventional treatment plan.

**Psychometric properties.** Reliability and validity of the HCI were established early in its development and use; discriminate validity was assessed using Kiesler’s (1987) Message Impact Inventory, which measures the impact of interaction with others, and concurrent validity was evaluated using the Interpretive Caring subscale of the HCI and Gardner and Wheeler’s (1987) Supportive Behavior Checklist. Low correlations supported discriminate validity of the HCI with the Impact Message Inventory’s hostile subscale (.20, p< .01), and with its submissive scale (.16, p< .05), and moderate correlations (.39, p< .001) were found between the Interpretive Caring subscale of the HCI and the Supportive Behavior Checklist. Reliability of the HCI was found to be strong for all four subscales: .89 for interpretive caring, .91 for spiritual caring, and .90 for both physical and sensitive caring (Watson, 2009, p. 176).

**Summary**

While the HCI is considered here as a measure of holistic nursing care, and its reliability and validity are not called into question, the holistic attributes it measures are limited to aspects of the physical, emotional, spiritual and sociocultural dimensions of nursing care, without considering those features which holistic nursing has come to be
defined by; namely, the intentionality of authentic presence, the facilitation of pattern recognition in the development of self-knowledge and self-care, and shared decision-making, including the use of CAM as therapeutic tools (Mariano, 2009).

In addition, the items addressing the nurse’s consideration of spiritual factors influencing health and healing do not consider those aspects of spiritual meaning not necessarily associated with religious entities, such as the search for peace, meaning, and purpose in life. Therefore, development of a more current, comprehensive tool which includes these elements of holistic nursing care, especially in the context of nurse practitioners’ care, was attempted.

**Development of a New Instrument**

The HCI was developed to measure the perception of nursing care from a holistic perspective, as described above, and served as a ‘working template’ or starting point for development of the Nurse Practitioner Holistic Caring Instrument (NPHCI). Dimensions or attributes of holistic nursing care not comprehensively addressed in the HCI (authentic presence, pattern recognition, and shared decision-making) and spirituality are more fully explored in this section.

**Authentic Presence**

Authentic presence is a vital component of holistic nursing care and is integral to the nurse’s relationship with patients (Burkhardt & Nagai-Jacobson, 2009). The nurse’s presence in the relationship is defined by the ability to be consciously focused on the patient and to bring the qualities of support, empathy, and compassion to interactions (McKivergin, 2009).
**Support.** Support is a key component of holistic nursing care. Support for care decisions, in life choices, and in catastrophic events, are common threads in holistic nursing care. In fact, a supportive environment (both social and emotional) has been shown to reduce the incidence of health problems, and it has been noted that the number of supporters, as well as the quality of that support, are important factors in promoting healing (Stuart-Shor & Wells-Federman, 2009, p. 185).

Examples of questions designed to elicit the perception of support by the nurse practitioner might include: “The nurse practitioner asks if those close to me support me” and “When I am upset, the nurse practitioner asks if I have someone I can talk to.” While the HCI does address the nurse as a source of support in the sensitive caring subscale, elements such as these could expand that dimension to explore other, more personal sources of support for patients.

**Empathy.** Included in the consideration of authentic presence is the concept of empathy. Mercer and Reynolds (2002) propose that the aims of empathy in therapeutic relationships are “to initiate supportive interpersonal communication in order to understand the perceptions and needs of the patient, to empower the patient to learn or cope more effectively, and to reduce or resolve a problem” (p. S9). LaMonica (1981) defines empathy similarly as “a central focus and feeling with and in the client’s world” (p. 398). Interestingly, LaMonica postulates that all elements of the concept must be present for empathy to be perceived, and further, that the “empathic process” is hierarchical, with each step building upon the previous one. In other words, the helper must perceive need in another, communicate the perception of need, and convey understanding to the person expressing the need (p. 399).
Mercer and Reynolds (2002) support this notion, observing that “it is the patient’s perception of the helping relationship that determines the effectiveness of empathy” (p. S10). Stuart-Shor and Wells-Federman (2009) also highlight the importance of empathy as an effective coping technique and as a critical component in holistic communication by maintaining that the ability to consider another’s perspective promotes caring through mindful reflection and active listening (p. 187).

**Compassion.** Compassion is a concept closely related to empathy, as it requires, according to Roach (2007), “immersion into the pain, brokenness, fear, and anguish of another, even when that person is a stranger” (p. 37). Similarly, Burnell and Agan (2013) define compassion as “a sympathetic consciousness of another’s distress, with the intention of alleviating it” (p. 181). The HCI does contain items which address the nurse’s attention to patients’ feelings; however, questions which more directly address the nurse’s ability to enter into the patient’s situation and provide hope, kindness, and understanding might, with advantage, be included in a comprehensive measure of holistic nurse practitioner care.

**Pattern Recognition**

The recognition of patterns in life events and situations is aimed at bringing self-knowledge to the level of conscious awareness. Newman (1986) describes the nurse’s responsibility as not to make sick people well or to prevent disease, but to assist patients in recognizing the healing power that is within them, by facilitating self-knowledge through the identification of life patterns. The nurse uses self as a therapeutic tool to assist patients in recognizing how life circumstances and decisions may be affecting their capacity for healing.
Assistance with pattern recognition by the nurse practitioner might be exemplified by items such as, “the nurse practitioner talks with me about the pattern of events and choices in my life, and how they may be affecting my health.”

**Shared Decision-making**

The promotion of shared decision-making in healthcare choices is another area that has come to define holistic nursing care (Mariano, 2009). Shared decision-making involves the patient as the authority on his or her own health, and the nurse as a partner and facilitator in the understanding of options, effects, and implications of therapeutic choices, including the use of CAM, if desired. Mariano (2009) describes this involvement as “a process of engagement versus compliance” (p. 54), and stresses that holistic nursing care honors the belief that patients have an inherent capacity for self-healing and a right to self-direction, qualities which the nurse supports and respects.

Items designed to capture the nurse practitioner’s attention to shared decision-making might include “the nurse practitioner is interested in what I think is causing or influencing my condition” and “the nurse practitioner supports my healthcare decisions, even if they differ from what others think is best for me.”

**Spirituality**

Spirituality is something of a ‘special case’ in terms of evaluating the meaning or quality of life in the facilitation of healing. It is, in essence, what “arises from a search for meaning” (Mariano, 2009, p. 49). As Dossey (1984) contends, “at some level, health…is a ground state, a state of wholeness which excludes nothing. It is lodged ‘in spirit’; it is subsumed by spirit. And the knowledge of health is made possible by spiritual awareness” (p. 181).
Spirituality, with its inescapably religious connotations, can be an emotional and somewhat contentious area in nursing care, since spiritual beliefs are intensely personal, difficult to express at times, and viewed as potentially controversial; indeed, its nature is such that meeting (or even attempting to assess) spiritual needs in clinical environments is often avoided (Galek et al., 2005). However, as Burkhardt and Nagai-Jacobson (2009) point out, “the work of healing requires recognition of the spiritual dimension of each person, including the healer, and an awareness that spirituality permeates every encounter” (p. 623).

The question of how to comprehensively assess and attend to spiritual needs in patient care has long plagued nurses, in part because of the difficulty in defining such an intangible and elusive concept. Galek et al. (2005) propose that the inherent difficulty in dealing with spirituality arises because “the human spirit is not easy to define and, perhaps, there is an argument that…the human spirit is indescribable” (p. 62). Further, they acknowledge the challenge in understanding and investigating a phenomenon that is both “transcendent and beyond the sphere of the finite mind” (p. 62).

Exploring patients’ need for and success in achieving inner peace and relaxation, however, should be included in a measure of holistic care, especially items addressing general health, positive well-being, and such feelings as satisfaction with life, and overall happiness—certainly subjects of interest in considering health and healing from a holistic perspective. Items such as “the nurse practitioner explores my need for guidance from a power outside myself” and “the nurse practitioner asks if I have a quiet place to meditate or reflect” may point to ways of attending to spiritual beliefs and of providing a holistic approach to spiritual care in a way that is not wholly dependent on religious reference.
(Galek et al., 2005). Initially, however, the subject must be broached; this may be addressed by simply expressing interest in exploring the patient’s spiritual views or beliefs, as they relate to health concerns.

**Summary**

While the NPHCI was developed by considering elements of C. L. Latham’s (1988) work, it is a new instrument, incorporating the overarching concepts of wholeness of persons, authentic presence, and facilitation of healing.

In the NPHCI, the dimensions of the concept of *wholeness of persons* are posited to be the physical, emotional, mental, spiritual and social aspects of patients’ lives. The dimensions identified in *authentic presence* are demonstrated by the NP engaging with, listening to, and focusing on what matters most to the client when planning care.

*Facilitation of healing* involves co-creating a plan of care in collaboration with the client, with particular attention to the promotion of self-care activities, and the consideration of, and support for, the use of alternative healing therapies by the client, if desired.
CHAPTER 3. METHODS

Research Design

This quantitative study describes the development and testing of a new, investigator-developed instrument designed to measure patients’ perception of the holistic attributes of nurse practitioner care. Content and face validity of the NPHCI (Appendix A) and its theoretical framework (Appendix B), propositions, and concept tree (Appendix C) were assessed in a pilot study prior to its use in this study. Following implementation of the pilot study, the instrument was further tested in the study sample to establish validity and reliability estimates.

Sample and Research Setting

This study used a convenience sample of adults recruited from the faculty and staff of seven academic colleges at Florida Atlantic University. The university employs over 3600 faculty and staff; adult participants were recruited from these populations. Since there is a total of 19 items on the NPHCI, and Nunnally (1978) recommends five to ten participants per instrument item for factor analysis of a new instrument, a minimum sample of between 100 and 200 participant responses was deemed necessary for adequate evaluation of the psychometric properties of the NPHCI. To this end, all faculty and staff in consenting university populations were accessed in anticipation of the possibility of low survey return rates or participant attrition. The NPHCI was administered in an electronic environment, via email to prospective participants. Initially, participants were recruited by requesting Communication Officers in the academic colleges of Arts and
Letters, Business, Design and Social Inquiry, Education, Engineering and Computer Sciences, Medicine, and Science to distribute the invitation email, which contained the consent, description of the study, and link to the survey (Appendix D). Since only three of the seven Communication Officers agreed to cooperate or acknowledged sending the email to their faculty and staff, and the return rate using this method was quite unsatisfactory, additional recruitment strategies were pursued. In consultation with the university Institutional Review Board, it was decided to directly email potential participants using ListServ, an electronic mailing list administered and supported by the university’s Office of Information Technology. Two Listservs were created, one comprising email addresses for faculty and staff in academic colleges, and another consisting of email addresses for staff in non-academic university departments. In addition, the invitation email was posted to an online newsletter distributed to university faculty and staff. The College of Nursing and departments at the Harbor Branch campus were excluded from recruitment, as the researcher is a student in the College of Nursing and one of the dissertation committee members is a Professor and Associate Director of Research at the Harbor Branch campus.

**Human Subjects Protection and Recruitment of Participants**

Approval to conduct the study was obtained from the Florida Atlantic University Institutional Review Board (IRB) (Appendix E). Once IRB approval was granted, an email was distributed to potential participants, explaining the purpose of the study and the informed consent process, and providing investigator contact information and a link to the instrument. By accessing and completing the instrument, participants signified consent to participate in the study (Appendix F). No personally identifying information
was collected from those consenting in the study. Demographic information was obtained from participants and included age, gender and ethnicity, level of education, household income, and experience of having received care from a nurse practitioner.

**Data Collection**

Data collection occurred over a period of three months, using the SNAP Survey Webhost, an online survey platform. A reminder email was sent to prospective participants in each group two weeks after initial activation of the survey. Data was uploaded from the SNAP website into an Excel spreadsheet, and then imported into Statistical Package for Social Sciences (SPSS, v.21) and IBM Amos (v.21) for analysis. Electronic data sets were stored in the investigator’s password-protected computer, accessible only by the investigator. No participant email addresses were associated with the data collected, or considered in the reporting of results.

**Instrumentation**

The instruments used in this study were the newly created Nurse Practitioner Holistic Caring Instrument (NPHCI) and Swanson’s (2002) Caring Professional Scale (CPS) (Appendix G, Appendix H), which was used to establish predictive (convergent) validity of the NPHCI.

**The Nurse Practitioner Holistic Caring Instrument.** The NPHCI is a 19-item, Likert-type scale designed to assess the degree to which the NP’s care is holistic, as perceived by patients. Each item was rated on a 6-point scale: strongly agree (1), agree (2), somewhat agree (3), somewhat disagree (4), disagree (5), and strongly disagree (6). The decision to use a 6-point scale was made to increase variability in responses and in an effort to avoid the occurrence of mid-range, non-committal scores.
Raw scores may range from 19 to 114, with a summary score for the instrument being calculated by totaling the raw score and dividing it by the number of items (19). A summary score of 1 indicates highest perception of holistic care by the patient or participant, with greater scores indicating increasingly lower perceptions of NP holistic caring.

There were no reverse-scored items in the NPHCI. In an informal preliminary trial with four adult volunteers during development of the instrument, the two items which were negatively constructed were misread, and participants indicated that they were confused by the wording of such items, so reverse-scoring was eliminated in the measure.

The NPHCI was designed to be administered to adults (at least 18 years of age) who have experience in being cared for by a nurse practitioner, and was proposed to measure the holistic nature or quality of that care.

The NPHCI was evaluated for readability by using the Flesch-Kincaid Grade Level scale, a function of Microsoft Word processing programs. This scale correlates well with Fry’s (1968) readability formula, as it assesses readability by counting the number of sentences and syllables in a sample, and determines a grade level. The NPHCI was assigned a 9th grade reading level by the scale, a score which is somewhat higher than the 5th-6th grade level that is recommended for reading comprehension by the general public. The determination of reading level necessitated some changes in word choice; i.e., the word ‘questionnaire,’ in the instructions to participants, was changed to ‘survey,’ and in item # 6, the word ‘alternative’ was changed to ‘other.’ It was anticipated that using words with fewer syllables would significantly reduce the reading grade level
of the instrument, and the score was reduced slightly after the changes (from 9.4 to 9.0), but the reading level was still well above the goal, most likely due to the necessary use of the polysyllabic word ‘practitioner’ in the title of the measure and instructions to participants, and to sentence length of the individual items. Further revision of the tool may therefore be warranted after use in the adult sample.

Analysis

Psychometric measures focus on the relationship between empirically-grounded indicators (the observable response) and the underlying unobservable concepts. These “directly unmeasurable” abstract concepts, when linked to empirical indicators, can then be more easily classified, quantified and explored by researchers (Carmines & Zeller, 1979, pp. 10-11). To this end, psychometric soundness of the NPHCI was assessed by using selected strategies to establish preliminary validity and reliability levels of the instrument.

Validity

Validity is a measure of whether an instrument is true to its intended purpose; in other words, whether it measures what it is intended to measure (Tappen, 2011, p. 139). Validity in the NPHCI was evaluated using face, content, construct, and predictive validity.

Face validity. Face validity is a subjective, cursory evaluation of whether an instrument looks as if it measures the construct of interest; for this reason it is generally considered to be the weakest means of evaluation of an instrument’s validity, but may be useful in determining how relevant and appealing the instrument is to possible participants (Tappen, 2011, p.140). Face validity was determined by soliciting the
opinion of the instrument from experts in the field of inquiry, as well as from those not involved in its development (‘lay’ people). Face validity of the NPHCI was ascertained by perusal and comment from peers (fellow students) in the doctoral nursing program, a small group of three adults (non-students) who completed the preliminary survey during its early development, and from participants in the pilot study who were deemed experts in the phenomenon under investigation. Recommendations from these groups were considered in the ongoing development of the NPHCI, but due to the inherent weakness of this method, other avenues of support for the validity of the NPHCI were pursued.

**Content validity.** Content validity is a measure of how well the instrument ‘covers’ the construct of interest; it involves evaluating the degree to which the items in a new instrument theoretically and operationally define the phenomenon being measured (Tappen, 2011, p.140). Expert opinion on the construct of interest, as measured by the instrument in a pilot study, was solicited via a Content Validity Index (CVI).

The CVI is a measure which has been developed to quantify feedback from expert reviewers, using a Likert-type scale to rate the instrument, and an algebraic formula to determine the degree of agreement regarding retention of individual items (Lawshe, 1975; Lynn, 1986). Expert reviewers were recruited from a convenience sample of nurses identified as experts in holistic nursing and nurse practitioner practice. Participants were asked to provide specific ratings on the extent to which each dimension of holistic nursing care is represented in the instrument, as well as general comments on the instrument as a whole.

Experts rated the relevance of each item using a 4-point scale: 4 (very relevant), 3 (quite relevant), 2 (somewhat relevant) and 1 (not relevant). Scores were then collapsed
into two categories: items receiving a 3 or 4 were deemed *content-relevant*, and items receiving a 1 or 2 were determined to be *content-irrelevant*. The number of content-relevant scores was then totaled for each item, and divided by the number of raters, producing a proportionate score (between 0 and 1) for the item. Scores were calculated in a similar manner for the instrument as a whole, dividing the number of content-relevant items by the total number of items in the measure. The higher the score (the closer to 1), the more relevant and valid the items and the instrument were determined to be (Tappen, 2011, p. 142).

**Construct validity.** Construct validity is a measure of how well the variables in an instrument represent the constructs they were developed to measure (Nunnally, 1978). Construct validity in the NPHCI was gauged by means of Exploratory Factor Analysis and Confirmatory Factor Analysis. Exploratory Factor Analysis (EFA) is a statistical strategy used to identify clusters of interrelated variables (instrument items) representing distinct factors or theoretical designations (Tappen, 2011). It is a statistical indication of the extent to which each item is correlated with the theoretical dimensions represented in the instrument; each factor is defined by those items that are more highly correlated with each other than with other items (Carmines & Zeller, 1979; Tappen, 2011). Although the NPHCI is a new instrument and was developed using a concept tree, EFA was used to identify or affirm the underlying dimensions of the construct of interest (Pett, Lackey, & Sullivan, 2003). Factors identified by EFA were then submitted to Confirmatory Factor Analysis (CFA) for validation.

Confirmatory factor analysis is used to evaluate the fit between theoretical constructs and empirical indicators in the data sample (Suhr, 2006). CFA was used in the
sample data to verify the factor structure identified in EFA, and to test the hypothetical relationship between the observed variables and their corresponding latent constructs.

**Predictive validity.** Predictive validity is a measure of how well an instrument relates to other measures of similar and dissimilar constructs, and is usually evaluated by means of convergent and discriminant validity (Nunnally, 1978, p. 88). Convergent and discriminant validity are related but opposing concepts, and operate on the principle that different measures of a similar construct should correlate highly with each other, and measures of dissimilar constructs should have low correlations with each other (Waltz, Strickland, & Lenz, 2010, p. 180). To evaluate convergent validity of the NPHCI, it was compared to Swanson’s (2002) Caring Professional Scale. This scale was chosen for its evaluation of caring behaviors in nurse-patient interactions, and its constructs of perceived support, respect, and patient-centeredness were expected to correlate well with the underlying constructs of the NPHCI.

Swanson’s (2000) CPS is an 18-item Likert-type scale which explores how consumers rate health care professionals on their practice relationship style; it was designed to assess both the nurse and the care received, and evaluates whether the nurse is attentive, informative, supportive, clinically competent, and aware of the respondent’s feelings (Watson, 2009, p. 199). The CPS has been used to evaluate caring in interactions with advanced practice nurses (Watson, 2009), and Cronbach’s alpha estimates for internal consistency in this population were strong (0.74-0.96).

Locating a measure of care that is constitutionally unlike that occurring in holistic nursing interactions is theoretically possible, but proved to be quite challenging. Comparison with a measure which assesses purely allopathic qualities, for example,
might have proved useful in validating the criteria of holistic interactions, since holistic nursing care is theoretically dissimilar to the traditional, ‘reductionist’ method of many practitioner-patient interactions. At this time, no such instrument has been located or available for use in the study.

**Reliability**

Reliability (homogeneity) describes whether all items in an instrument reliably measure the attributes of the phenomenon under scrutiny; it is a measure of the internal consistency of the instrument, and is the most often evaluated using Cronbach’s *alpha* coefficient (DeVon et al., 2007, p. 160). Cronbach’s *alpha* represents the calculation of all possible combinations of items into two halves; it is an estimate of the correlation of the existing measure with a hypothetical alternative form, and is most useful when it is impractical to create or administer alternate forms of a measure (Tappen, 2011). If the items in the measure are not well-correlated with the underlying construct, *alpha* scores will be low; a coefficient *alpha* of .70 or above is considered acceptable for a new measure (Nunnally & Bernstein, 1994). The NPHCI was evaluated by means of Cronbach’s *alpha* after administration in the sample, and items may be discarded and/or revised for future studies, according to the obtained scores.
CHAPTER 4. RESULTS

This chapter presents a description of the study sample, results of psychometric testing of the instruments (validity and reliability), and the results of instrument use in the sample, addressing the research questions explored in this study, which were: (1) how reliable and valid is the Nurse Practitioner Holistic Caring Instrument, and (2) to what degree is Nurse Practitioner practice holistic, as perceived by patients and measured by the NPHCI?

Study Sample

The survey instruments (NPHCI and CPS) were administered in an online format to 3601 adult faculty and staff at Florida Atlantic University. The total number of persons who accessed the online surveys was 234 (6% response rate). Of these responses, 75 were discarded because they were incomplete. Forty-one of these respondents completed the demographic items but did not complete the instruments, and the other 34 discarded instrument responses had numerous instances of missing data. Additionally, six respondents completed the survey but did not respond to the question regarding having been cared for by a nurse practitioner; these responses were included in analysis. Two respondents completed the survey in spite of having denied being cared for by an NP; these responses were not included in analysis but were retained as interesting data for possible future research. The total number of responses used in analysis was 159.
Demographic Data

Demographic data for the sample included age, gender, ethnicity, educational level, household income, and experience with having received healthcare form a nurse practitioner. This information is presented in Table 1.

Table 1

Sample Demographics

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<tr>
<th>Demographic</th>
<th>Frequency</th>
<th>Percentage</th>
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<tbody>
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<td><strong>Age (n = 159)</strong></td>
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<td>18-24</td>
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<td>Over 65</td>
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<tr>
<td><strong>Gender (n = 155)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>46</td>
<td>30</td>
</tr>
<tr>
<td>Female</td>
<td>109</td>
<td>70</td>
</tr>
<tr>
<td><strong>Ethnicity (n = 157)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>117</td>
<td>75</td>
</tr>
<tr>
<td>Black or AA</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>American Indian</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>Asian</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Education (n = 157)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctoral</td>
<td>59</td>
<td>38</td>
</tr>
<tr>
<td>Master’s</td>
<td>55</td>
<td>35</td>
</tr>
<tr>
<td>Bachelor's</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td>High School</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td><strong>Income x $1000 (n = 154)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over $100</td>
<td>73</td>
<td>47</td>
</tr>
<tr>
<td>$75-$100</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td>$50-$75</td>
<td>35</td>
<td>23</td>
</tr>
<tr>
<td>$30-$50</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>Less than $30</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td><strong>Received healthcare from NP (n = 153)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Yes</td>
<td>151</td>
<td>99</td>
</tr>
</tbody>
</table>
**Age.** Participants were asked to report their age by choosing from a set of age ranges. The sample ($n = 159$) consisted of two participants aged 18 to 24 (1%), 50 (31%) aged 25 to 44, 82 (52%) aged 45 to 64, and 25 (16%) aged 65 and over.

**Gender.** Gender of participants was self-reported with two choices, male and female. The sample ($n = 155$) consisted of 46 males (30%) and 109 females (70%).

**Ethnicity.** Participants were asked to indicate their ethnicity by choosing one option from a list of eight categories. The sample ($n = 157$) consisted of 117 persons who identified as White Caucasian (75%), 13 (8%) as Black or African American, 2 (1%) as American Indian or Alaska Native, 18 (12%) as Hispanic or Latino, 5 (3%) as Asian, and 2 (1%) as Other.

**Educational level.** Respondents were asked to identify their highest level of educational attainment from five choices. Of those who responded ($n = 157$), 59 had obtained a doctoral degree (38%), 55 (35%) had a master’s degree, 23 (15%) reported having a bachelor’s degree, 10 (6%) had only a high school diploma or equivalent, and 10 (6%) reported other academic designation.

**Income.** Household income was indicated by choosing one of a range of options. Data ($n = 154$) revealed that 73 (47%) earned more than $100,000 per year; 23 (15%) earned from $75,000 to $100,000; 35 (23%) earned between $50,000 and $75,000; 18 (12%) earned $30,000 to $50,000; and 5 (3%) earned less than $30,000.

**Received healthcare from a nurse practitioner.** Participants were asked whether they had received healthcare from a nurse practitioner. The sample ($n = 153$) was composed of 151 persons who responded in the affirmative (99%), and 2 persons (1%) who indicated that they had not received such care.
Psychometric Testing of Research Instruments

This section will discuss the results of preliminary psychometric analysis of the NPHCI, including validity and reliability estimates.

Validity

Four types of validity of the NPHCI were evaluated in the study sample: face, content, construct, and predictive validity. Face and content validity were determined by use of a pilot study (CVI), and construct validity was estimated by factor analysis. Predictive validity was determined by exploring correlations between the newly developed Nurse Practitioner Holistic Caring Instrument and the Caring Professional Scale, an established instrument.

Face and content validity. A purposive convenience sample of experts with graduate education in holistic nursing and nurse practitioner practice \((n = 7)\) was recruited to rate how well the NPHCI captured the theoretical designations of holistic nursing care. Potential participants were recruited from the American Holistic Nurses Association’s (AHNA, 2014) practitioner directory page on their website, faculty listings from academic institutions identified on the American Holistic Nurses Credentialing Center’s (AHNCC, 2014) list of endorsed schools page, and by Florida Atlantic University master’s program faculty recommendation. Fifteen nurses with experience in holistic and/or nurse practitioner practice were invited to participate in the pilot study. Respondents were asked to provide demographic information regarding their primary role (faculty or practice) and highest academic degree attained (master’s or doctoral). Response rate for the study was 46\% \((n = 7)\). Only four out of seven participants furnished demographic information; of these, three identified their primary role as faculty.
and one as practice-based, and three of the four reported a doctoral degree as their highest academic attainment. Interestingly, only one of the doctorally-prepared respondent’s primary role was identified as practice.

Analysis of CVI responses revealed that five out of the seven participants were in perfect agreement (1.00) in rating the scale as a whole as ‘content relevant’. In addition, 14 out of 19 items on the NPHCI were accorded a perfect score of 1.00, with the remaining five items receiving scores of .86, indicating high rater agreement on the relevance of those items. The instrument, as a whole, was accorded an average score of .96 by raters, which again indicates a very high degree of content validity. Table 2 illustrates the content validity index results.
Table 2

*Content Validity Index Results*

<table>
<thead>
<tr>
<th>Item</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>CVI Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>.86</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>1.00</td>
</tr>
<tr>
<td>3</td>
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<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
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<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>1.00</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>1.00</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
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<tr>
<td>7</td>
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<td>4</td>
<td>-</td>
<td>.86</td>
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<tr>
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<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>1.00</td>
</tr>
<tr>
<td>11</td>
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<td>3</td>
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<td>4</td>
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<td>4</td>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>12</td>
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<td>4</td>
<td>4</td>
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<td>-</td>
<td>.86</td>
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<tr>
<td>13</td>
<td>4</td>
<td>4</td>
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<td>4</td>
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<td>4</td>
<td>4</td>
<td>1.00</td>
</tr>
<tr>
<td>14</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>1.00</td>
</tr>
<tr>
<td>15</td>
<td>4</td>
<td>3</td>
<td>4</td>
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<td>4</td>
<td>1.00</td>
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<td>4</td>
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<td>4</td>
<td>1.00</td>
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<tr>
<td>17</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>1.00</td>
</tr>
<tr>
<td>18</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>1.00</td>
</tr>
<tr>
<td>19</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>1.00</td>
</tr>
</tbody>
</table>

1.00 .89 1.00 1.00 1.00 1.00 .84

<table>
<thead>
<tr>
<th>Degree</th>
<th>M</th>
<th>D</th>
<th>D</th>
<th>D</th>
<th>NR</th>
<th>NR</th>
<th>NR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role</td>
<td>F</td>
<td>P</td>
<td>F</td>
<td>F</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
</tbody>
</table>

*Note.* M = Master’s degree, D = Doctoral degree, F = Faculty, P = Practice, NR = No Response
Free-text responses were also elicited from respondents, and included supportive comments as well as critical suggestions. Free-text responses were generally favorable regarding face validity and included remarks such as “Each item appears to cover part of your concept tree” and “It looks like a wonderful tool!” Free-text responses from participants were also reviewed in contemplating revision of the instrument. Among responses were those advocating adding items specifically addressing cultural and environmental influences on health, and “creating an environment that facilitates healing”, but since these topics were considered when creating items 2 and 5, and items 3, 4, 10 and 14, respectively, and since the measure received favorable content validity scores, it was decided that no revisions or additions to the measure would be made before administering the NPHCI to sample participants in this study. Table 3 highlights the free-text responses.
Table 3

Content Validity Index Free-text Responses

<table>
<thead>
<tr>
<th>Rater</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Obviously this is the ideal. Might be a little unrealistic in practice to address all items (although should).</td>
</tr>
<tr>
<td>B</td>
<td>How is asking about mental health different from discussing feelings? Overall, I was just a bit disappointed in the survey - just a bit. It seems to assume that the initial approach is or should be on physical health and the other questions, considerations, approaches are added on. Why does physical health even have to be the focus of the encounter?</td>
</tr>
<tr>
<td>C</td>
<td>Each item appears to cover part of your concept tree. All seem to be relevant. Excellent items and well done content validity study.</td>
</tr>
<tr>
<td>D</td>
<td>It looks like a wonderful tool!</td>
</tr>
<tr>
<td>E</td>
<td>As a certified advanced holistic nurse, I have a concern that you are breaking apart holism, when theoretically, it is more than the sum of its parts. I believe you need to at least add one item that addresses the “whole person.” As a certified advanced transcultural nurse, I believe you need to add an item that addresses cultural practices and their impact on health.</td>
</tr>
<tr>
<td>F</td>
<td>I am a practicing holistic nurse practitioner- I wonder if some mention of culture and environment might be appropriate- holistic nurses should be very interested in potential for toxic exposures, and harmony of persons within their environments.</td>
</tr>
<tr>
<td>G</td>
<td>I think you have created an excellent instrument that will facilitate a holistic approach to NP practice. My only comment is in the domain of Authentic Presence. I would consider adding an item such as creates an environment that facilitates caring and healing.</td>
</tr>
</tbody>
</table>

Construct validity. Since the NPHCI was developed by postulating the theoretical dimensions of the phenomenon of interest, confirmatory factor analysis (CFA) was initially elected for use in the sample data. The results were unsatisfactory, however, showing a poor fit between the proposed item designations and their corresponding constructs. Therefore, exploratory factor analysis (EFA) was pursued, in an attempt to identify more appropriate theoretical groupings in the instrument data.
**Exploratory factor analysis.** None of the variables correlated extremely highly with another (all were < .9). In addition, the Kaiser-Meyer-Olkin measure of sampling adequacy value was .953; this and Bartlett’s Test of Sphericity (p = .000, df = 171), indicated adequacy of the sample for EFA. Exploratory Factor Analysis using Varimax (orthogonal) rotation with Kaiser Normalization revealed data loading on three factors, as illustrated in Table 4.

Table 4

**Exploratory Factor Analysis for NPHCI**

<table>
<thead>
<tr>
<th>Item</th>
<th>Initial Eigenvalues</th>
<th>Extraction Sums of Squares Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>% of Variance</td>
</tr>
<tr>
<td>1</td>
<td>12.137</td>
<td>63.880</td>
</tr>
<tr>
<td>2</td>
<td>1.521</td>
<td>8.005</td>
</tr>
<tr>
<td>3</td>
<td>.851</td>
<td>4.477</td>
</tr>
<tr>
<td>4</td>
<td>.562</td>
<td>2.960</td>
</tr>
<tr>
<td>5</td>
<td>.470</td>
<td>2.475</td>
</tr>
<tr>
<td>6</td>
<td>.439</td>
<td>2.310</td>
</tr>
<tr>
<td>7</td>
<td>.408</td>
<td>2.149</td>
</tr>
<tr>
<td>8</td>
<td>.355</td>
<td>1.870</td>
</tr>
<tr>
<td>9</td>
<td>.325</td>
<td>1.711</td>
</tr>
<tr>
<td>10</td>
<td>.312</td>
<td>1.643</td>
</tr>
<tr>
<td>11</td>
<td>.266</td>
<td>1.401</td>
</tr>
<tr>
<td>12</td>
<td>.235</td>
<td>1.238</td>
</tr>
<tr>
<td>13</td>
<td>.219</td>
<td>1.155</td>
</tr>
<tr>
<td>14</td>
<td>.197</td>
<td>1.038</td>
</tr>
<tr>
<td>15</td>
<td>.186</td>
<td>.976</td>
</tr>
<tr>
<td>16</td>
<td>.157</td>
<td>.826</td>
</tr>
<tr>
<td>17</td>
<td>.145</td>
<td>.763</td>
</tr>
<tr>
<td>18</td>
<td>.108</td>
<td>.569</td>
</tr>
<tr>
<td>19</td>
<td>.106</td>
<td>.556</td>
</tr>
</tbody>
</table>
In interpreting the rotated factor loadings, an item was said to load on a component if the eigenvalue was .40 or greater. And, even though the third factor had an eigenvalue less than 1 (.851), the scree plot (Figure 1) supported the identification of three factors in the data. Together, the identified factors constituted the three subscales of the NPHCI and accounted for 76% of variance in the sample.

![Scree Plot](image)

*Figure 1. Scree plot.*

Factor loadings revealed clear designations for nearly half of the items; the remainder loaded much more highly on one factor than another, and only a few were relatively close in value. Those few were considered for possible future factor
reassignment, but no revision was performed in the data at this time, pending CFA
results. These factor loading items are presented in Table 5.

Table 5

*Rotated Factor Loading for Items in the NPHCI*

<table>
<thead>
<tr>
<th>Items</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is knowledgeable about my physical condition</td>
<td>.816</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Considers how other areas of my life may affect my physical condition</td>
<td>.798</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seems to have time to talk to me</td>
<td>.820</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encourages me to express my feelings</td>
<td>.470</td>
<td>.722</td>
<td></td>
</tr>
<tr>
<td>Is interested in what I think is causing or influencing my condition</td>
<td>.457</td>
<td>.735</td>
<td></td>
</tr>
<tr>
<td>Offers information and guidance on other healing therapies, such as</td>
<td></td>
<td>.749</td>
<td></td>
</tr>
<tr>
<td>yoga, meditation, or energy therapies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is interested in talking to me about my spiritual views or beliefs</td>
<td></td>
<td></td>
<td>.829</td>
</tr>
<tr>
<td>Considers my feelings when discussing health issues</td>
<td>.595</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asks me about my mental health</td>
<td>.417</td>
<td>.685</td>
<td></td>
</tr>
<tr>
<td>Listens to me when I talk to her/him</td>
<td>.557</td>
<td>.668</td>
<td></td>
</tr>
<tr>
<td>Talks to me about what is stressful in my life</td>
<td>.512</td>
<td>.588</td>
<td></td>
</tr>
<tr>
<td>Works together with me in creating a plan of care</td>
<td>.615</td>
<td>.563</td>
<td></td>
</tr>
<tr>
<td>Supports my healthcare decisions, even when they differ from what</td>
<td></td>
<td>.757</td>
<td></td>
</tr>
<tr>
<td>others think is best for me</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shows concern for what matters most to me</td>
<td>.695</td>
<td>.520</td>
<td></td>
</tr>
<tr>
<td>Asks me about how the people who are important to me support me</td>
<td>.477</td>
<td>.630</td>
<td></td>
</tr>
<tr>
<td>Talks with me about the pattern of events and choices in my life,</td>
<td>.569</td>
<td>.510</td>
<td></td>
</tr>
<tr>
<td>and how they may be affecting my health</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asks for my input when discussing treatment options</td>
<td>.765</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Focuses on the health issues that I think are important</td>
<td>.767</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helps me find ways to balance my life</td>
<td>.665</td>
<td>.575</td>
<td></td>
</tr>
</tbody>
</table>
Using the factors identified in the EFA results, theoretical designations and their corresponding item assignments were re-evaluated in the NPHCI. Revised groupings were tentatively labelled Patient-centered, Co-creation, and Spirit-mind.

**Confirmatory factor analysis.** Confirmatory Factor Analysis, using the three factors identified in EFA (Figure 2) and their corresponding instrument items, was then performed. Confirmatory Factor Analysis, or Structural Equation Modeling, uses several statistical tests to determine the adequacy of the proposed model fit to the data (Suhr, 2006). Fit index results (Table 6) indicated a much more satisfactory fit in the revised groupings than that obtained using the item designations that were theoretically assigned when creating the NPHCI (Table 7).

*Figure 2. Confirmatory Factor Analysis of NPHCI.*
Table 6

*Fit Indices for Confirmatory Factor Analysis in the NPHCI*

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMIN/DF</td>
<td>2.350</td>
</tr>
<tr>
<td>GFI</td>
<td>.830</td>
</tr>
<tr>
<td>CFI</td>
<td>.933</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.092</td>
</tr>
</tbody>
</table>

*Note.* CMIN/DF = Chi square/degrees of freedom, GFI = Goodness of Fit Index, CFI = Comparative Fit Index, RMSEA = Root Mean Square Error of Approximation.

Table 7

*Theoretical and CFA Item Designations for the NPHCI*

<table>
<thead>
<tr>
<th>Theoretical Designations</th>
<th>Items</th>
<th>CFA Designations</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholeness of Persons</td>
<td>1, 4, 7, 8, 9, 11, 15</td>
<td>Spirit/Mind</td>
<td>6, 7, 9, 11, 15</td>
</tr>
<tr>
<td>Authentic Presence</td>
<td>3, 10, 12, 14, 17, 18</td>
<td>Patient-Centered</td>
<td>8, 12, 13, 14, 16, 17, 18, 19</td>
</tr>
<tr>
<td>Facilitation of Healing</td>
<td>2, 5, 6, 13, 16, 19</td>
<td>Co-Creation</td>
<td>1, 2, 3, 4, 5, 10</td>
</tr>
</tbody>
</table>

As can be seen by the fit index results, the proposed model demonstrates an adequate fit with the theoretical model, with some indices suggesting a stronger fit than others. CMIN/DF (Chi square/degrees of freedom) describes the similarity between the observed (model) and the expected (data) adjusted by degrees of freedom; for a good fit
between the two, this value should be less than four and as close to zero as possible, so 2.350 indicates a good fit (Kenny & McCook, 2003). The GFI (Goodness of Fit Index) was .830, which is only slightly below the acceptable level of .85. This value is dependent upon sample size, however, and current consensus discourages relying heavily on this index in accepting overall fit of the model (Sharma, Mukherjee, Kumar, & Dillon, 2005). The CFI (Comparative Fit Index) represents the extent to which the proposed model is better than a null model; this value should be as close to 1 as possible; in this sample it is .933, which indicates good model fit (Bentler & Bonett, 1980). The Root mean square error of approximation (RMSEA) indicates the amount of variance not explained or accounted for by the model- this value should be less than 1, and was .092 in this sample. These indices, taken together, indicate a good fit between the data and the proposed model.

**Predictive validity.** Predictive (convergent) validity of the NPHCI was determined by correlation of its scores with CPS scores.

Convergent validity between the NPHCI and the CPS was calculated between total and mean scores of both instruments. Analysis conducted in this fashion revealed strong correlations (Table 8). Total score correlations between the NPHCI and the CPS were .747 (p = .000), and mean score correlations were .749 (p = .000). In addition, correlations between the CPS total scores and individual subscales of the NPHCI (Table 9) were determined to be moderate to strong: correlation with the NPHCI patient-centered subscale was .750 (p = .000, n = 184), with the co-creation subscale was .795 (p = .000, n = 187), and with the spirit/mind subscale was .541 (p = .000, n = 185). These
scores are high enough to establish convergent validity of the NPHCI, but not so high as to render the NPHCI redundant.

Table 8

*Correlations between NPHCI and CPS Totals and Means*

<table>
<thead>
<tr>
<th>Statistic</th>
<th>NPHCI and CPS Totals</th>
<th>NPHCI and CPS Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.747</td>
<td>.749</td>
</tr>
<tr>
<td>Significance (2-tailed)</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>( n )</td>
<td>187</td>
<td>187</td>
</tr>
</tbody>
</table>

Table 9

*Correlations between CPS Total Scores and NPHCI Subscales*

<table>
<thead>
<tr>
<th>NPHCI Subscales</th>
<th>CPS Total</th>
<th>Patient-centered</th>
<th>Co-Creating</th>
<th>Spirit/Mind</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.750</td>
<td>.795</td>
<td>.541</td>
<td></td>
</tr>
<tr>
<td>Significance (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>( N )</td>
<td>184</td>
<td>187</td>
<td>185</td>
<td></td>
</tr>
</tbody>
</table>

**Discriminant validity.** Discriminant validity of the NPHCI was not evaluated in this study, due to the inability to locate a measure dissimilar to the NPHCI, but this estimate of validity should be addressed in future studies if such a measure is located.
Reliability

Reliability (internal consistency) of both the NPHCI and the CPS was explored using Cronbach’s $\alpha$.

In the present study, the NPHCI and its subscales showed quite high estimates of reliability (Table 10); the instrument as a whole was estimated at .965, the co-creation subscale was .939, patient subscale was .947, and the spirit/mind subscale was .887. The only item capable of increasing reliability of the NPHCI if deleted was item 7 (Table 11), which would increase the $\alpha$ only slightly (by .002). In addition, it is the only item specifically addressing spiritually in the scale, so deletion of this item is not planned based on this data.

Table 10

*Internal Consistency of the NPHCI and Subscales*

<table>
<thead>
<tr>
<th>Scale and Subscales</th>
<th>$n$</th>
<th>$\alpha$</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPHCI</td>
<td>159</td>
<td>.965</td>
<td>19</td>
</tr>
<tr>
<td>Co-Creation</td>
<td>176</td>
<td>.939</td>
<td>6</td>
</tr>
<tr>
<td>Patient</td>
<td>169</td>
<td>.947</td>
<td>8</td>
</tr>
<tr>
<td>Spirit/Mind</td>
<td>176</td>
<td>.887</td>
<td>5</td>
</tr>
</tbody>
</table>

*Note.* $\alpha = \text{alpha}$, $n = \text{sample size}$. 
### Table 11

**NPHCI Item Reliability**

<table>
<thead>
<tr>
<th>Item</th>
<th>Scale Mean If Item Deleted</th>
<th>Scale Variance If Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach’s α If Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>45.547</td>
<td>341.566</td>
<td>.673</td>
<td>.674</td>
<td>.965</td>
</tr>
<tr>
<td>2</td>
<td>45.358</td>
<td>332.193</td>
<td>.787</td>
<td>.806</td>
<td>.963</td>
</tr>
<tr>
<td>3</td>
<td>45.616</td>
<td>338.592</td>
<td>.707</td>
<td>.720</td>
<td>.964</td>
</tr>
<tr>
<td>4</td>
<td>45.170</td>
<td>329.205</td>
<td>.826</td>
<td>.821</td>
<td>.963</td>
</tr>
<tr>
<td>5</td>
<td>45.283</td>
<td>330.938</td>
<td>.774</td>
<td>.780</td>
<td>.963</td>
</tr>
<tr>
<td>6</td>
<td>44.151</td>
<td>321.433</td>
<td>.697</td>
<td>.619</td>
<td>.965</td>
</tr>
<tr>
<td>7</td>
<td>43.302</td>
<td>334.908</td>
<td>.504</td>
<td>.456</td>
<td>.967</td>
</tr>
<tr>
<td>8</td>
<td>44.862</td>
<td>326.829</td>
<td>.778</td>
<td>.661</td>
<td>.963</td>
</tr>
<tr>
<td>9</td>
<td>44.239</td>
<td>320.537</td>
<td>.777</td>
<td>.707</td>
<td>.963</td>
</tr>
<tr>
<td>10</td>
<td>45.440</td>
<td>334.539</td>
<td>.767</td>
<td>.738</td>
<td>.964</td>
</tr>
<tr>
<td>11</td>
<td>44.604</td>
<td>318.519</td>
<td>.826</td>
<td>.757</td>
<td>.963</td>
</tr>
<tr>
<td>12</td>
<td>44.855</td>
<td>323.833</td>
<td>.826</td>
<td>.768</td>
<td>.963</td>
</tr>
<tr>
<td>13</td>
<td>44.535</td>
<td>324.668</td>
<td>.835</td>
<td>.772</td>
<td>.963</td>
</tr>
<tr>
<td>14</td>
<td>44.975</td>
<td>328.569</td>
<td>.829</td>
<td>.804</td>
<td>.963</td>
</tr>
<tr>
<td>15</td>
<td>44.270</td>
<td>321.021</td>
<td>.773</td>
<td>.691</td>
<td>.963</td>
</tr>
<tr>
<td>16</td>
<td>44.541</td>
<td>320.237</td>
<td>.813</td>
<td>.750</td>
<td>.963</td>
</tr>
<tr>
<td>17</td>
<td>44.818</td>
<td>323.403</td>
<td>.796</td>
<td>.725</td>
<td>.963</td>
</tr>
<tr>
<td>18</td>
<td>45.075</td>
<td>330.728</td>
<td>.774</td>
<td>.761</td>
<td>.963</td>
</tr>
<tr>
<td>19</td>
<td>44.340</td>
<td>319.719</td>
<td>.840</td>
<td>.804</td>
<td>.962</td>
</tr>
</tbody>
</table>

CPS analysis (Table 12) revealed high reliability estimates for the instrument (.909, \( n = 169 \)), which are comparable to scores obtained in other studies (.79 to .96) using the CPS to evaluate interactions with advanced practice nurses (Watson, 2009, p. 315).
Instrument Results in the Sample

The NPHCI was scored on a 6-point Likert-type scale, with lower scores indicating higher perception of holistic caring by the NP. Mean totals of the items were analyzed to determine if they met assumptions of parametric statistics. These assumptions, including normal distribution, skewness and kurtosis, were met for the NPHCI and its subscales (Figures 3, 4, 5, and 6).

<table>
<thead>
<tr>
<th>Item</th>
<th>Scale Mean If Item Deleted</th>
<th>Scale Variance If Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Cronbach’s α If Item deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>38.43</td>
<td>153.152</td>
<td>-.611</td>
<td>.938</td>
</tr>
<tr>
<td>2</td>
<td>40.62</td>
<td>115.022</td>
<td>.806</td>
<td>.897</td>
</tr>
<tr>
<td>3</td>
<td>40.93</td>
<td>119.585</td>
<td>.779</td>
<td>.899</td>
</tr>
<tr>
<td>4</td>
<td>38.19</td>
<td>149.166</td>
<td>-.557</td>
<td>.931</td>
</tr>
<tr>
<td>5</td>
<td>37.87</td>
<td>141.888</td>
<td>-.331</td>
<td>.921</td>
</tr>
<tr>
<td>6</td>
<td>40.93</td>
<td>119.281</td>
<td>.785</td>
<td>.899</td>
</tr>
<tr>
<td>7</td>
<td>41.14</td>
<td>122.094</td>
<td>.718</td>
<td>.901</td>
</tr>
<tr>
<td>8</td>
<td>40.98</td>
<td>116.863</td>
<td>.882</td>
<td>.896</td>
</tr>
<tr>
<td>9</td>
<td>40.60</td>
<td>114.325</td>
<td>.826</td>
<td>.896</td>
</tr>
<tr>
<td>10</td>
<td>40.93</td>
<td>115.816</td>
<td>.907</td>
<td>.895</td>
</tr>
<tr>
<td>11</td>
<td>40.92</td>
<td>116.048</td>
<td>.903</td>
<td>.895</td>
</tr>
<tr>
<td>12</td>
<td>40.95</td>
<td>117.217</td>
<td>.873</td>
<td>.896</td>
</tr>
<tr>
<td>13</td>
<td>40.86</td>
<td>116.737</td>
<td>.853</td>
<td>.896</td>
</tr>
<tr>
<td>14</td>
<td>41.05</td>
<td>123.158</td>
<td>.707</td>
<td>.902</td>
</tr>
<tr>
<td>15</td>
<td>40.50</td>
<td>115.287</td>
<td>.821</td>
<td>.896</td>
</tr>
<tr>
<td>16</td>
<td>39.60</td>
<td>115.528</td>
<td>.681</td>
<td>.901</td>
</tr>
<tr>
<td>17</td>
<td>40.36</td>
<td>116.113</td>
<td>.769</td>
<td>.898</td>
</tr>
<tr>
<td>18</td>
<td>41.21</td>
<td>122.427</td>
<td>.709</td>
<td>.901</td>
</tr>
</tbody>
</table>
Figure 3. Histogram NPHCI.

Figure 4. Histogram NPHCI Co-Creation Subscale.
Figure 5. Histogram NPHCI Patient-centered Care Subscale.

Figure 6. Histogram NPHCI Spirit/Mind Subscale.
Item scores for the NPHCI (Table 13) revealed no mean score higher than 3.975, with a mean score for all variables of 2.4934 (Table 14). These scores are well within the ‘strongly agree’ to ‘somewhat agree’ range of the scale, indicating that NP care was generally perceived to be holistic by patients in the sample. As regards individual item scores, items 1, 2, 3, 5, and 10 received the most favorable scores. Those accorded the least favorable scores were items 6, 7, 9, and 15.

Table 13

**NPHCI Item Scores**

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.730</td>
<td>.8765</td>
<td>159</td>
</tr>
<tr>
<td>2</td>
<td>1.918</td>
<td>1.0731</td>
<td>159</td>
</tr>
<tr>
<td>3</td>
<td>1.660</td>
<td>.9469</td>
<td>159</td>
</tr>
<tr>
<td>4</td>
<td>2.107</td>
<td>1.1228</td>
<td>159</td>
</tr>
<tr>
<td>5</td>
<td>1.994</td>
<td>1.1335</td>
<td>159</td>
</tr>
<tr>
<td>6</td>
<td>3.126</td>
<td>1.6059</td>
<td>159</td>
</tr>
<tr>
<td>7</td>
<td>3.975</td>
<td>1.4667</td>
<td>159</td>
</tr>
<tr>
<td>8</td>
<td>2.415</td>
<td>1.2694</td>
<td>159</td>
</tr>
<tr>
<td>9</td>
<td>3.038</td>
<td>1.4879</td>
<td>159</td>
</tr>
<tr>
<td>10</td>
<td>1.836</td>
<td>1.0180</td>
<td>159</td>
</tr>
<tr>
<td>11</td>
<td>2.673</td>
<td>1.4734</td>
<td>159</td>
</tr>
<tr>
<td>12</td>
<td>2.421</td>
<td>1.2994</td>
<td>159</td>
</tr>
<tr>
<td>13</td>
<td>2.742</td>
<td>1.2590</td>
<td>159</td>
</tr>
<tr>
<td>14</td>
<td>2.302</td>
<td>1.1405</td>
<td>159</td>
</tr>
<tr>
<td>15</td>
<td>3.006</td>
<td>1.4777</td>
<td>159</td>
</tr>
<tr>
<td>16</td>
<td>2.736</td>
<td>1.4384</td>
<td>159</td>
</tr>
<tr>
<td>17</td>
<td>2.459</td>
<td>1.3582</td>
<td>159</td>
</tr>
<tr>
<td>18</td>
<td>2.201</td>
<td>1.1406</td>
<td>159</td>
</tr>
<tr>
<td>19</td>
<td>2.937</td>
<td>1.4128</td>
<td>159</td>
</tr>
</tbody>
</table>

*Note.* SD = Standard Deviation, N = sample size. Scoring for the NPHCI, 1 = strongly agree, 2 = agree, 3 = somewhat agree, 4 = somewhat disagree, 5 = disagree, 6 = strongly disagree.
Table 14

*Descriptive Statistics for NPHCI and CPS*

<table>
<thead>
<tr>
<th>Scores</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPHCI Total Score</td>
<td>191</td>
<td>45.9372</td>
<td>19.58695</td>
</tr>
<tr>
<td>NPHCI Average Score</td>
<td>191</td>
<td>2.4934</td>
<td>.98747</td>
</tr>
<tr>
<td>CPS Total Score</td>
<td>187</td>
<td>31.4439</td>
<td>13.81836</td>
</tr>
<tr>
<td>CPS Average Score</td>
<td>187</td>
<td>1.8758</td>
<td>.81313</td>
</tr>
</tbody>
</table>

The CPS was scored on a five-point scale with lower scores again indicating higher perception of caring behaviors. Item scores (Table 15) for the CPS demonstrated means lower than 3.11 for positively-worded items, corresponding to a range between “yes, definitely” and “about half and half”. Mean scores for negatively-designated items (1, 4, and 5) were higher than 4.28, corresponding to the “occasionally” to “no, not at all” range. The mean score for all items on the CPS was 1.8758, indicating that sample patients generally found NP care to be ‘definitely’ to ‘mostly’ caring.
Table 15

*CPS Item Scores*

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4.28</td>
<td>1.165</td>
<td>169</td>
</tr>
<tr>
<td>2</td>
<td>2.09</td>
<td>1.184</td>
<td>169</td>
</tr>
<tr>
<td>3</td>
<td>1.78</td>
<td>.962</td>
<td>169</td>
</tr>
<tr>
<td>4</td>
<td>4.52</td>
<td>.970</td>
<td>169</td>
</tr>
<tr>
<td>5</td>
<td>4.84</td>
<td>.693</td>
<td>169</td>
</tr>
<tr>
<td>6</td>
<td>1.78</td>
<td>.973</td>
<td>169</td>
</tr>
<tr>
<td>7</td>
<td>1.57</td>
<td>.884</td>
<td>169</td>
</tr>
<tr>
<td>8</td>
<td>1.73</td>
<td>.998</td>
<td>169</td>
</tr>
<tr>
<td>9</td>
<td>2.11</td>
<td>1.197</td>
<td>169</td>
</tr>
<tr>
<td>10</td>
<td>1.78</td>
<td>1.026</td>
<td>169</td>
</tr>
<tr>
<td>11</td>
<td>1.79</td>
<td>1.019</td>
<td>169</td>
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<tr>
<td>12</td>
<td>1.76</td>
<td>.990</td>
<td>169</td>
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<td>13</td>
<td>1.85</td>
<td>1.035</td>
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<td>14</td>
<td>1.66</td>
<td>.831</td>
<td>169</td>
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<td>15</td>
<td>2.21</td>
<td>1.150</td>
<td>169</td>
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<td>16</td>
<td>3.11</td>
<td>1.338</td>
<td>169</td>
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<td>17</td>
<td>2.35</td>
<td>1.171</td>
<td>169</td>
</tr>
<tr>
<td>18</td>
<td>1.50</td>
<td>.874</td>
<td>169</td>
</tr>
</tbody>
</table>

*Note.* SD = Standard Deviation, N = sample size. Scoring for CPS, 1 = yes, definitely; 2 = mostly; 3 = about half and half; 4 = occasionally; 5 = no, not at all.
CHAPTER 5. DISCUSSION

This chapter will present a brief overview of the study, discuss findings in the sample, identify limitations of the study, and explore implications and recommendations for future research.

Overview of the Study

This quantitative descriptive study was undertaken to establish preliminary psychometric estimates of the Nurse Practitioner Holistic Caring Instrument (NPHCI), and to report findings from its use in the sample population.

With passage and implementation of the PPACA (2010), and the proposals put forth in the IOM report (2010), nurse practitioners are slated to take on increased responsibility for primary healthcare delivery in the United State. Exploration of the nature and quality of NP care is therefore warranted, and, since nursing care is by definition and tradition holistic in nature, this inquiry attempts to quantify the degree to which NP care upholds and preserves core nursing (holistic) values.

Sampling strategy, setting, ethical considerations, consent, instruments, data collection, and data analysis procedures were approved by the Florida Atlantic University Institutional Review Board (IRB). The research questions addressed in this study were:

1. How reliable and valid is the Nurse Practitioner Holistic Caring Instrument (NPHCI)?

2. To what degree is Nurse Practitioner practice holistic, as perceived by patients and measured by the NPHCI?
The population of interest included persons over the age of 18 who have received healthcare in the U.S. from a nurse practitioner. A convenience sample of adult faculty and staff at Florida Atlantic University, willing to complete an online survey about NP care, was recruited.

Instrument distribution was accomplished via SNAP, a web-based survey program. The link made available to participants included a description of the study, consent to participation, and survey instruments: the newly developed Nurse Practitioner Holistic Caring Instrument (NPHCI), designed to measure holistic attributes of NP care, and the Caring Professional Scale (CPS), an established instrument measuring caring behaviors in professional nursing encounters.

Data analysis, including sample demographics, exploratory factor analysis, reliability estimates, and correlations, was performed using SPSS (v.21.0); IBM Amos (v.21) was used for confirmatory factor analysis.

**Discussion of Findings**

Study findings included demographic characteristics of the sample, preliminary psychometric estimates of the NPHCI, and results of instrument completion in the sample.

**Sample Demographics**

Sample demographic analysis included age, gender, ethnicity, educational level, and household income. In the sample, three-quarters of participants were white (Caucasian), two-thirds were female, and two-thirds had graduate education (master’s or doctorate). Over half were aged 45 to 64 years, and nearly half reported yearly household
income greater than $100,000. These findings are consistent with a high proportion of faculty respondents.

**Psychometric Properties**

A pilot study, utilizing a convenience sample of experts in holistic nursing and nurse practitioner care, established the fitness of the NPHCI for use in the sample. The majority of raters adjudged individual items and the instrument as a whole as content valid, and free-text responses generally supported adequate face validity of the instrument. Factor analysis estimates revealed that the theoretical designations originally identified in the concept tree were not a good fit with the sample data; exploratory and confirmatory factor analysis revealed factors which were better fitted to a model of holistic nursing care. These results suggest that patients perceive holistic nurse practitioner care to involve focusing on the patient, creating a plan of care in concert with the patient, and considering the patient’s spiritual and mental health in planning and delivering care. In addition, the factors identified using EFA reflected dimensions of the theoretically postulated constructs of holistic nurse practitioner care, and were at a more concrete level of abstraction.

Correlations between the NPHCI and the CPS were high, indicating that the constructs of perceived support, respect, and patient-centeredness in the CPS corresponded well with the underlying constructs of the NPHCI, further supporting the validity of the new instrument.

Reliability estimates for the NPHCI were quite high, well over the suggested threshold of .70 for a new instrument (Nunnally & Bernstein, 1994). Reliability of the NPHCI subscales (*patient-centered*, *co-creation*, and *spirit/mind*) was also generally
high; however, the spirit/mind subscale showed only moderate-to-strong reliability, indicating the need for consideration of review and/or revision of this subscale before use in future research.

**Results**

Instrument results in the study sample revealed that patients found nurse practitioner care to exhibit attributes of holistic nursing care. Mean instrument scores fell within the ‘agreed’ range for most items on both the NPHCI and the CPS, indicating that NP care is generally perceived to be holistic by patients in the sample. Strongest correlations were found between the CPS and the *co-creation* and *patient-centered* scales of the NPHCI; these subscales account for the majority of items in the NPHCI dealing with consideration of patient feelings and preferences, provision of support for care decisions, and attending to what matters most to patients.

As regards individual NPHCI item scores, items 1, 2, 3, 5, and 10 received the most favorable scores; these items deal with the co-creation of care in the NP’s practice, signifying that NPs consider patient preference and input in forming care decisions. Those accorded the least favorable scores (items 6, 7, 9, and 15) represent the use of CAM therapies, spiritual and mental health, and social support, indicating that NPs may address these issues less often in practice.

Items 1 and 3 in the NPHCI received the lowest mean scores by respondents, indicating that taking time to talk to patients was a frequently-encountered featured of NP care, and that NPs were considered to be knowledgeable regarding patients’ physical conditions. These two item scores support the notion that nurse practitioner care does indeed exhibit a balance between nursing values and medical knowledge. These findings
are echoed in the CPS results, where the lowest mean scores were accorded to items 14 (technically skilled) and 18 (respectful).

**Results related to literature review.** The need for this study was identified through gaps in the literature related to nurse practitioner practice; specifically, the paucity of quantitative research regarding patients’ perspectives of holistic core nursing values in NP care.

Results from this study support earlier findings regarding holistic qualities of NP care, particularly those related to enhanced communication and perceived support (Avorn et al., 1991; Covington, 2005; Prescott & Driscoll, 1980). Further, the present study endorses previous findings that NPs report incorporating holistic nursing values in practice; namely, patient advocacy, listening, non-judgmental acceptance of patient choices, and viewing patient conditions from a comprehensive, whole-person perspective (Brykczynski, 2012; Donnelly, 2006; Filej & Kaucic, 2013; Strandberg et al., 2007). Conversely, the current study findings challenge those of Lawson (2002) in that NPs were generally not reported to be abrupt, insulting, or emotionally distant.

It was hoped that this study would augment previous work in using a large, ethnically- and gender-diverse sample, but instead mirrored the relatively small, White, female-dominant samples of previous efforts. In addition, the present study was limited to one research setting, as were most of those that preceded it. This study did, however, more fully explore patients’ perceptions of holistic care in NPs’ practice, and did conceptually define holistic care within a theoretical framework.

**Limitations of the Study**

As with any research, this study had limitations that restrict generalization of
results. This inquiry used a convenience sample of adult faculty and staff at one university setting. In addition, the sample size, although adequate for statistical analysis, was smaller than anticipated and was largely composed of middle-aged Caucasian females with graduate education and income over $75,000/year. In addition, not every participant furnished demographic information. Results cannot therefore be generalized to the population of nurse practitioner patients, and further study is needed in larger, more diverse samples to better determine patient perception of NP care. This study was conducted in an online setting, so it did not capture data from patients who did not have access to a computer.

The study employed a new instrument, so further psychometric evaluation is needed. Discriminant validity, in particular, was not attempted and would need to be addressed in a future study. Content Validity Index participants recommended revisions and additions that might enhance reliability estimates in a future study, particularly in the realms of environment and spiritual health.

This descriptive study was limited to participants’ self-reported recollections and perceptions of experience with NP care, and responses may therefore have been subject to historical inconsistencies.

Another issue that may have affected study results is the timing of instrument distribution. Due to logistic and technical difficulties, recruitment occurred in the period during and immediately after university final examinations week, typically a very busy time for faculty and staff in academic settings. This may have affected willingness to participate and the participants’ ability to provide thoughtful and bias-free responses to instrument items.
Implications and Recommendations for Future Research

The development of an instrument measuring the holistic attributes of NP care was undertaken to attempt to quantitatively capture patients’ perceptions of the important advantages of NP care, specifically the integration and preservation of core nursing values in primary healthcare delivery. The majority of previous studies have used clinical outcomes and satisfaction levels (provider-driven indices) to provide a framework for the value of nurse practitioner care; this study attempted to expand that understanding of NP care to include the extent to which nursing values are incorporated in care. Nurse practitioner care is posited to differ in essential ways from purely medical practice, most importantly in its attention to a relationship-centered, coordinated and comprehensive mode of care delivery. Exploring this care model may therefore have great significance for patients, practitioners and educators in guiding care, improving practice and planning academic curricula.

Patients

According to the World Health Organization (2008), primary care delivery is grounded in the building of enduring relationships which honor the values of patient-centeredness, continuity, comprehensiveness, and integration in planning and implementing care. Further, it has been proposed that nurse practitioner primary care delivery is characterized by a holistic perspective, the formation of partnerships with patients, expert clinical performance, the use of research in guiding practice, and the implementation of diverse approaches to health and illness management (Brown, 2005, p. 146). These qualities and activities render NPs ideally suited to filling the need for primary care practitioners, particularly in those populations which currently do not have
access to care, such as those who are uninsured or under-insured. With a view to expanding access to these populations, the PPACA provides funds for NP education in community health center training and management, for nurse-managed health centers, school-based health centers, community prevention programs and employer wellness programs, and for NP placement in federally-qualified health centers serving low-income and uninsured persons (Lathrop & Hodnicki, 2014).

In the present study, core holistic nursing values in the NP’s practice were shown to support a patient-centered, clinically competent and comprehensive approach to care, essentially marrying care and cure in healthcare delivery. However, in view of the narrowly defined demographic characteristics of the present sample, the holistic attributes of NP care should be more fully explored, especially in larger, more ethnic-, income-, and gender-diverse samples. In future studies, it is recommended that the NPHCI be administered in patient samples from, for example, federally-identified Primary Care Professional Shortage Areas and community and nurse-managed health centers, thus providing a more universal picture of patient’s perception of the holistic attributes of NP care.

Providers

The provisions of the PPACA (2010) make possible the expansion of primary and preventive care access by allowing nurse practitioners to use their expertise in leading and transforming care in these areas. Such a course of action remains controversial, however. Donelan, DesRoches, Dittus and Buerhaus (2013) report that physicians are resistant to the idea of NPs taking responsibility for primary care, and that few data are
available on how NP care differs from that of physicians, particularly in regards to quality and effectiveness.

The IOM (2010) report contains recommendations for increasing research and data collection on healthcare providers, and for expanding data collected on advanced practice nursing—recommendations which may be addressed, in part, by future studies using the NPHCI. The NPHCI can be adapted for use, therefore, in nurse practitioner populations, as quantitative inquiry regarding the presence of core holistic values in NP care may serve to more fully explore providers’ perspectives in this area. Exploring the extent to which nurse practitioners report incorporation of core holistic nursing values in their practice may also prove useful in more clearly articulating what Sangster-Gormley, Frisch, and Schreiber (2013) call the “value-added benefit” of NP care, especially in the arena of primary care delivery, and may serve to more fully inform policy debates regarding the utilization of NPs in primary care, particularly the controversy surrounding practice barriers and the perceived need for collaborative agreements between NPs and physicians.

Prior to this study, in the process of conducting informal interviews with nurse practitioners regarding the extent to which their care was grounded in a holistic approach to patients, several broad themes emerged. Although participant responses to queries regarding the definition and incorporation of holistic attributes in their practice were not consistent across interviews, the importance of developing relationships with patients and of considering the whole person when planning care were repeatedly encountered. These responses suggested that NPs do consider holistic values in providing care, but that
further inquiry into the presence and significance of core holistic nursing values in NP practice is warranted.

**Educators**

As nurse practitioners contribute to the expansion of primary care delivery in the U.S., educational preparation will play a pivotal role in the extent to which core holistic nursing values are integrated and preserved in NP care. It has been asserted that nurses educated in using a holistic framework for care provide more comprehensive, patient-centered, and less fragmented care (Conrad, 2013), so educational strategies which formally and explicitly honor and promote these attributes are essential to the integration and preservation of core holistic nursing values in primary care delivery.

To this end, the NPHCI may be adapted for use in nurse practitioner faculty populations, inquiring about the extent to which faculty incorporate core holistic nursing values in their program curricula. Data from such studies may be used to identify strengths in NP educational efforts, as well as in highlighting areas for improvement in practice and education.

**Concluding Remarks**

This study contributes to the body of knowledge about nurse practitioner care by exploring patients’ perceptions regarding the preservation of core holistic nursing values in NP care. As NPs are poised to take a prominent role in the expansion of primary care access mandated by the PPACA (2010), results from this inquiry have important implications for patients, nurse practitioners, and educators in guiding care, improving practice and planning academic curricula. Results suggest that NPs provide patient-centered, comprehensive and clinically competent patient care, rendering them ideally
suited to lead primary care delivery. Nurse practitioners, with their advanced education in diagnosing and treating health conditions, their ability to deliver safe, effective, and economical care, and their attention to the preservation of core holistic nursing values demonstrate great potential, therefore, for expanding, enhancing and transforming primary healthcare delivery in the United States.
APPENDICES
# Appendix A

**Nurse Practitioner Holistic Caring Instrument (NPHCI)**

<table>
<thead>
<tr>
<th>Item</th>
<th>The Nurse Practitioner:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Is knowledgeable about my physical condition</td>
</tr>
<tr>
<td>2</td>
<td>Considers how other areas of my life may affect my physical condition</td>
</tr>
<tr>
<td>3</td>
<td>Seems to have time to talk to me</td>
</tr>
<tr>
<td>4</td>
<td>Encourages me to express my feelings</td>
</tr>
<tr>
<td>5</td>
<td>Is interested in what I think is causing or influencing my condition</td>
</tr>
<tr>
<td>6</td>
<td>Offers information and guidance on other healing therapies, such as yoga, meditation or energy therapies</td>
</tr>
<tr>
<td>7</td>
<td>Is interested in talking to me about my spiritual views or beliefs</td>
</tr>
<tr>
<td>8</td>
<td>Considers my feelings when discussing health issues</td>
</tr>
<tr>
<td>9</td>
<td>Asks me about my mental health</td>
</tr>
<tr>
<td>10</td>
<td>Listens to me when I talk to her/him</td>
</tr>
<tr>
<td>11</td>
<td>Talks to me about what is stressful in my life</td>
</tr>
<tr>
<td>12</td>
<td>Works together with me in creating a plan of care</td>
</tr>
<tr>
<td>13</td>
<td>Supports my health care decisions, even if they differ from what others think is best for me</td>
</tr>
<tr>
<td>14</td>
<td>Shows concern for what matters most to me</td>
</tr>
<tr>
<td>15</td>
<td>Asks me about how the people who are important to me support me</td>
</tr>
<tr>
<td>16</td>
<td>Talks with me about the pattern of events and choices in my life, and how they may be affecting my health</td>
</tr>
<tr>
<td>17</td>
<td>Asks for my input when discussing treatment options</td>
</tr>
<tr>
<td>18</td>
<td>Focuses on the health issues that I think are important</td>
</tr>
<tr>
<td>19</td>
<td>Helps me find ways to balance my life</td>
</tr>
</tbody>
</table>
Appendix B

Theoretical Framework of NPHCI

CONCEPTUAL FRAMEWORK

Holism

MIDDLE-RANGE THEORIES

Swanson’s Caring Theory

Shuler Nurse Practitioner Practice Model

Proposition

The Nurse Practitioner strives to foster a holistic relationship with clients

Proposition

The Nurse Practitioner transcends the diagnosis-focused medical model in caring for patients

Proposition

The Nurse Practitioner understands and integrates the physical, emotional, psychological, social, and spiritual facets of the client’s life in order to provide holistic care

Proposition

The Nurse Practitioner develops a relationship with patients, involving authentic presence, listening, and focusing on what is most important to the patient

Proposition

The Nurse Practitioner facilitates healing by assisting in pattern recognition, supporting a self-directed plan of care, and considering the benefit of alternative healing therapies, if desired
## Appendix C

### Concept Tree

<table>
<thead>
<tr>
<th>Concept</th>
<th>Concept</th>
<th>Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wholeness of Persons</strong></td>
<td><strong>Authentic Presence</strong></td>
<td><strong>Facilitation of Healing</strong></td>
</tr>
<tr>
<td>Dimensions</td>
<td>Dimensions</td>
<td>Dimensions</td>
</tr>
<tr>
<td>Physical</td>
<td>Conscious engagement</td>
<td>Support for care decisions</td>
</tr>
<tr>
<td>Emotional</td>
<td>Listening</td>
<td>Guidance in planning use of alternative therapies, if desired</td>
</tr>
<tr>
<td>Psychological</td>
<td>Focus on what is most important to the pt.</td>
<td>Assistance in perceiving patterns and discerning meaning in life events</td>
</tr>
<tr>
<td>Social</td>
<td>Mutual Decision-making</td>
<td>Facilitation of self-knowledge</td>
</tr>
<tr>
<td>Spiritual</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix D

Email Introduction

Nurse Practitioner Care Survey
Investigator(s): Bernadette Lange, PhD (Faculty Advisor)
Elizabeth Kinchen, MS (PhD Nursing Student)

Thank you for your interest in participating in our research study.

The purpose of the study is to explore patients’ experiences with Nurse Practitioner care. You will be asked to complete a 37-item survey on your experience with receiving healthcare from a Nurse Practitioner. It should take you no more than 10-15 minutes to complete this survey.

Your participation in this study is your choice. You may skip any questions that make you feel uncomfortable and you are free to withdraw from the study at any time without penalty.

The risks involved with participating in this study are no more than might be expected in normal, everyday activities. Potential benefits that you may receive from participation include contributing to a greater understanding of Nurse Practitioner care.

If you experience problems or have questions regarding your rights as a research subject, contact the Florida Atlantic University Division of Research at (561) 297-0777. For other questions about the study, you should call the principal investigator: Bernadette Lange, PhD (Faculty Advisor) at (561) 297-3264 or Elizabeth Kinchen, MS (PhD student in Nursing) at (772) 237-4005.

By completing the attached survey, you give consent to participate in this study.

Please open and read the attached Consent Form and follow the link to the Survey below.
Appendix E

Institutional Review Board Approval

DATE: March 12, 2014
TO: Bernadette Lange, PhD
FROM: Florida Atlantic University Social, Behavioral and Educational Research IRB
PROTOCOL #: 553869-2
PROTOCOL TITLE: [553869-2] Development and Testing of an Instrument to Measure Holistic Attributes of Nurse Practitioner care
SUBMISSION TYPE: Response/Follow-Up
REVIEW CATEGORY: Exemption category # A3
ACTION: DETERMINATION OF EXEMPT STATUS
EFFECTIVE DATE: March 11, 2014

Thank you for your submission of Response/Follow-Up materials for this research study. The Florida Atlantic University Social, Behavioral and Educational Research IRB has determined this project is EXEMPT FROM FEDERAL REGULATIONS. Therefore, you may initiate your research study.

We will keep a copy of this correspondence on file in our office. Please keep the IRB informed of any substantive change in your procedures, so that the exemption status may be re-evaluated if needed. Substantive changes are changes that are not minor and may result in increased risk or burden or decreased benefits to participants. Please also inform our office if you encounter any problem involving human subjects while conducting your research.

If you have any questions or comments about this correspondence, please contact Angela Clear at:

Institutional Review Board
Research Integrity/Division of Research
Florida Atlantic University
Bldg. 80, Rm. 106
Boca Raton, FL 33431
Phone: 561-297-0777

* Please include your protocol number and title in all correspondence with this office.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within our records.
Appendix F

Consent Form

ADULT CONSENT FORM

1) **Title of Research Study:** Nurse Practitioner Care Survey

2) **Investigator(s):** Bernadette Lange, PhD (Faculty Advisor) and Elizabeth Kinchen (PhD Nursing student)

3) **Purpose:** The purpose of this research study is to explore patients’ experiences with Nurse Practitioner care

4) **Procedures:**
   - You will be asked to complete a 37-item survey on your experience with receiving healthcare from a Nurse Practitioner
   - The survey will take about 10-15 minutes to complete
   - Your participation is entirely voluntary and you may choose to stop participating at any time, or for any reason

5) **Risks:** Risks involved with participating in this study are no more than might be expected in normal everyday activities

6) **Benefits:** We do not know if you will receive any direct benefits by taking part in this study. However, this research will contribute to a greater understanding of Nurse Practitioner care

7) **Data Collection & Storage:** Any information collected about you will be kept confidential and secure and only the people working with the study will see your data, unless required by law. The data will be kept for 5 years in a password-protected computer in the investigator’s office. We will make every attempt to keep your data secure to the extent permitted by the technology. However, no guarantees can be made regarding the interception of data sent via the Internet by any third parties. After 5 years, paper copies will be destroyed by shredding and electronic data will be deleted. We may publish what we learn from this study. If we do, we will not let anyone know your name/identity unless you give us permission.

8) **Contact Information:**
   - If you have questions about the study, you should call or email the Faculty Advisor, Bernadette Lange, PhD at (561) 297-3264 or Elizabeth Kinchen, MS (PhD student in Nursing) at (772) 237-4005.
   - If you have questions or concerns about your rights as a research participant, contact the Florida Atlantic University Division of Research at (561) 297-0777 or send an email to fau.research@fau.edu.

9) **Consent Statement:**
   "I have read the information describing this study. All my questions have been answered to my satisfaction. I am 18 years of age or older and freely consent to participate. I understand that I am free to withdraw from the study at any time without penalty. By completing the survey, I signify my consent to participate in this study.

Approved on: 03/11/14
Expires on: N/A
Institutional Review Board
Appendix G

Caring Professional Scale (CPS)

Directions: Please choose the response which best describes your experience in receiving health care from a Nurse Practitioner.

Was the Nurse Practitioner who took care of you:

- Emotionally Distant?
- Comforting?
- Positive?
- Abrupt?
- Insulting?
- Informative?
- Clinically Competent?
- Understanding?
- Personal?
- Caring?
- Supportive?
- An attentive listener?
- Centered on you?
- Technically skilled?
- Aware of your feelings?
- Visibly touched by your experience?
- Able to offer you hope?
- Respectful of you?
Appendix H

Permission to Reprint CPS

August 20, 2014

Kristen M. Swanson RN, PhD, FAAN
Dean and Professor
Seattle University College of Nursing
901 12th Avenue P.O. Box 22200
Seattle, WA 98122-1090

Dear Dr. Swanson:

My name is Elizabeth Kinchen, and I am completing a doctoral dissertation at
Florida Atlantic University, entitled “Development and Testing of an Instrument to Measure
Holistic Attributes of Nurse Practitioner Care”. I kindly request your permission to reprint in my
dissertation excerpts from the following:


The excerpts I request to reproduce are:

Caring Professional Scale

My dissertation will be published through ProQuest Information and Learning Company
(PQIL), and an electronic version will be archived in the digital collection at Florida Atlantic
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including non-exclusive world rights in all languages. These rights will in no way restrict
republication of the material in any other form by you or by others authorized by you. Your
signing of this letter will also confirm that you own the copyright to the above-described
material.

If these conditions meet your approval, please sign below and return this letter with the enclosed
stamped envelope.

Sincerely,

Elizabeth Voorhees Kinchen

[Signature]

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REFERENCES

American College of Physicians. (2010). *Health reform law likely to improve access to affordable coverage but impact on primary care access and health costs is ‘uncertain.’* Retrieved from http://www.acponline.org/pressroom/ppaca.htm


