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Effects of Full Practice Authority on Chronic Disease Outcomes and Costs

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Nichole Marie Alegria

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Walden University
2020

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Abstract

Effects of Full Practice Authority on Chronic Disease Outcomes and Costs

by

Nichole Marie Alegria

MS, The University of Texas at Arlington, 2016

BS, The University of Texas at Arlington, 2011

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

May 2020

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Abstract

Rising medical costs and increasing shortage of qualified primary care providers has left hundreds of thousands of Texans with limited or no access to primary care services. One way to bridge the gap is to use advanced practice registered nurses who function as nurse practitioners (NPs). Current evidence indicates that by expanding the scope of practice (SOP) of NPs, access to care and patient outcomes improve. The aim of this DNP project was to analyze the current health care policy and examine the relationship and impact SOP has on patient outcomes and health care costs associated with hypertension and diabetes. Gail and Jacqueline's conceptual model for nursing and health policy acted as a guiding framework for understanding how health policy impacts quality, access, and costs. This systematic review of the literature was conducted by searching the Cumulative Index to Nursing and Allied Health Literature, Medline, EmBase, ProQuest, and PubMed. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow diagram and the Revised Standards for Quality Improvement Reporting Excellence tool were used to record, track, organize, and evaluate the relevant studies. Four of the 168 identified articles analyzed the effect NP SOP on patient outcomes. The analysis of articles did not indicate any observable differences in patient outcomes, regardless of SOP. Expanding SOP appeared to have a substantial financial impact, significantly decreasing health care costs. The results of the systematic review and practice recommendations will be presented to Texas legislators to influence NP SOP policy and impact social change by allowing full practice authority to NPs and leading to increased access to cost-effective, quality health care without compromising patient safety.

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Section 1: Nature of the Project

Introduction

The enactment of the Patient Protection and Affordable Care Act (ACA) has increased the demand for primary care physicians (PCPs) within a health care system that is already facing a physician workforce shortage (Dillion & Gary, 2017; Holmes, 2016 Xue, Ye, Brewer, & Spetz, 2015; Jeak & Bailey, 2015). A recent analysis of the national supply and demand for PCPs found Texas to have the most substantial shortage with an estimated deficit of 2,840 full-time equivalent PCPs (The United States Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Workforce and National Center for Health Workforce Analysis, 2016). These shortages directly and negatively affect access to care, patient health outcomes, and overall health care costs. Using Advance Practice Registered Nurses (APRNs) who function as nurse practitioners (NPs) is one recommendation to increase access to qualified health care providers (IOM, 2010). It is estimated that using NPs can save approximately $6.4 billion in healthcare during the next 10 years (Barnes, Aiken, & Villarruel, 2016) while producing patient outcomes that are comparable with those of physicians (Grimes, Thomas, Padhye, Ottosen, & Grimes, 2018; Holmes, 2016; Xue et al., 2015; Yong-Fang, Loresto Jr., Rounds, & Goodwin, 2013). However, in some states, such as Texas, restricted legislation limits the scope of practice (SOP) of APRNs. Removing these barriers and allowing full practice authority (FPA) is essential to increase access to quality health care, improve patient outcomes, and decrease the rising health care costs.

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Problem Statement

Hypertension (HTN) and diabetes (DM) are two of the most prevalent and costly chronic diseases plaguing Americans today. These chronic diseases cost the United States $375.6 billion each year in medications, health care visits, and missed days of work (Centers for Disease Control and Prevention [CDC], 2017; CDC, 2019). In 2017, in the state of Texas, the total direct medical expenses for diagnosed DM were estimated at $18.9 billion (American Diabetes Association, n.d.) and $13.8 billion for HTN (CDC, 2015; Zhang, Wang, Zhang, Fang, & Ayala, 2017).

The goal is to prevent these diseases from occurring, or at least, minimizing the effects that these diseases cause. This is called *primary prevention* and is the most cost-effective form of health care (Robert Wood Foundation, 2009). However, with the shortage of qualified primary care providers, millions of Americans face limited or no access to primary care services (Dillion & Gary, 2017; Holmes, 2016). In 2019, of the 50 states and the District of Columbia, Texas ranked last on access and affordability to health care (Commonwealth Fund Scorecard on State Health System Performance, Texas, 2019). Indeed, of the 254 counties in Texas, 34 had no primary care physician, and 63 had fewer than five primary care physicians per county. Comparatively speaking, Dallas County alone has 2,373 primary care physicians. A recent analysis of the national supply and demand for PCPs found Texas to have the most substantial shortage with an estimated deficit of 2,840 full-time equivalent PCPs (The United States Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Workforce and National Center for Health Workforce Analysis, 2016). Lack of

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access to care directly influences patient outcomes and health care costs. There is a significant gap in access to healthcare for Texans. In this DNP project, I aimed to provide research-based evidence on a known problem and offer a potential, cost-effective quality solution that advances the profession of nursing without compromising patient safety.

Purpose

My purpose of this doctoral project was to analyze the current health care policy and examine the relationship and effects that SOP has on patient outcomes and health care costs associated with hypertension (HTN) and diabetes (DM). One way to bridge the gap in access to care is to utilize APRNs who function as NPs. The Institute of Medicine [IOM] (2010) recommended that APRNs practice to the full extent of their education and training. *Full practice authority (FPA)* is defined by the American Association of Nurse Practitioners (AANP, 2013, p. 1) as follows:

> the collection of state practice and licensure laws that allow for nurse practitioners (NPs) to evaluate patients, diagnose, order and interpret diagnostic tests, initiate and manage treatments—including the ability to prescribe medications—under the exclusive licensure authority of the state board of nursing.

The case for FPA for NPs has been debated for years. Objections typically stem from opposing medical associations who argue that NPs do not have enough education nor training to practice independently leading to inferior patient outcomes (Grimes et al., 2018). Recent evidence has suggested that by expanding the scope of practice of NPs,

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access to primary care services will broaden by almost two-fold, leading to increased primary prevention, improved patient outcomes, and decreased health care costs (Jeak & Bailey, 2015; Hooker & Muchow, 2015; Xue et al., 2015; Yong-Fang et al., 2013). Each state board of nursing regulates SOP. Currently, 23 states allow FPA for NPs. Figure 1 shows the 2019 Nurse Practitioner State Practice environment. Examining the relationship that SOP has on patient outcomes and health care costs is essential as utilizing NPs in primary care could be a cost-effective alternative to improve access to care without compromising patient safety.

Figure 1. 2019 Nurse Practitioner State Practice Environment.

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Full Practice Authority

State practice and licensure legislation allows all NPs to evaluate patients; diagnose, order and interpret diagnostic tests; and initiate and manage treatments, including prescribing medications and controlled substances, under the exclusive licensure authority of the state board of nursing. This is the model recommended by the National Academy of Medicine, formerly called the Institute of Medicine, and the National Council of State Boards of Nursing (AANP, 2013).

Reduced Practice Authority

State practice and licensure legislation reduce the ability of NPs to engage in at least one element of NP practice. State law requires a career-long regulated collaborative agreement with another health provider for the NP to provide patient care, or it limits the setting of one or more elements of NP practice (AANP, 2013). These collaborative agreements range from $6,000 to $50,000 per year (Martin & Alexander, 2019).

Restricted Practice Authority

State practice and licensure legislation restrict the ability of NPs to engage in at least one element of NP practice. State law requires career-long supervision, delegation, or team management by another health provider for the NP to provide patient care (AANP, 2013). As noted previosuly, these collaborative agreements can cost NPs from $6,000 to $50,000 per year.

Texas is a restricted practice state that requires physician delegation and supervision for both practice and prescriptive authority. This mandatory collaborative agreement allows the NP to evaluate patients; diagnose, order and interpret diagnostic

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tests; and initiate and manage treatments, including prescribe medications. Without this agreement, the NP cannot practice.

Nature of the Doctoral Project

I conducted the research review searching common, electronic nursing and allied health science databases The Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline, Embase, ProQuest, and PubMed. Additional evidence was obtained from official governmental websites, publicly disseminated reports, and other public information that is relevant to this doctoral project. This data was needed to identify and appraise the current, primary evidence available to answer the question: What is the effect of FPA on patient outcomes and health care costs associated with HTN and DM and how can this evidence be useful for Texas, a restricted practice state? The Manual For Systematic Review (2019), provided the following guiding framework to conduct a proper systematic review: (a) formulate the research question, (b) identify the scope of the review, (c) define explicit inclusion and exclusion criteria, (d) perform a comprehensive search to identify all relevant studies, (e) select the studies that meet the identified criteria, (f) appraise the quality of the studies and organize the knowledge found, (g) summarize and synthesize the findings, and (h) identify and present the implications for future practice. This guiding framework was necessary to gather quality evidence that highlights the gap in practice and allows the researcher to provide a potential solution in the form of health care reformation.

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Significance

The 10th amendment of the U.S. constitution gives states the authority to regulate and legislate health professional licensure (Chesney & Duderstadt, 2017). Many states have laws in place that limit FPA for APRNs. However, evidence suggests that using APRNs to the full extent of their education and training by granting FPA will assist in decreasing both health care costs and improving access to care while providing high quality care and patient outcomes that are comparable to that of physicians (Ortiz, Hofler, Bushy, Lin, Khanijahani, & Bitney, 2018; Holmes, 2016; Jeak & Bailey, 2015; Hooker & Muchow, 2015; Xue et al., 2015; Yong-Fang et al., 2013). The National Nursing Centers Consortium (2011) found that APRNs provide care that is comparable to that of physicians at lower costs while delivering more disease prevention, health education, and promotion activities. In addition, the national average cost of an APRN visit was 20% less than that of a physician, and the treatment provided by APRNs in retail clinics cost less than the physician office with no apparent adverse effects on quality of care. A White House Report (2017) posited that state-specific, restricted SOP for NPs limits choice and competition, resulting in higher overall health care costs with fewer incentives for providers to improve quality. This report further recommends that states modify SOP legislation to allow APRNs to practice to the full extent of their education, training, and licensure. On January 13, 2017, the Department of Veterans Affairs (VA) amended its medical practice regulations allowing APRNs to have FPA; this includes NPs, clinical nurse specialists (CNSs), and certified nurse-midwives (CNMs). Even with this knowledge, the restricted Texas SOP legislation remains the same while access to care is

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the lowest of all 50 states and the District of Columbia (The Commonwealth Fund, 2019). My purpose in this DNP project was to provide compelling research supported evidence to assist in persuading legislators on the need for health care reformation in Texas.

Summary

Nursing is committed to social justice and the advocacy for the welfare of the vulnerable, injured, and sick. These populations are the ones most affected by the lack of access to quality health care. Restricted SOP legislation impedes access to care which directly effects patient outcomes and health care costs. We must redesign the current health care system amidst the rising shortage of qualified PCPs and the continuing rise in health care costs. In the following sections, I will provide more evidence on the problem and recommendations for legislative reformation.

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Section 2: Background and Context

Introduction

Rising health care costs, coupled with the lack of qualified PCPs, directly and negatively affects access to care and patient outcomes. In 2017, in the state of Texas, the total direct medical expenses for diagnosed DM were estimated at $18.9 billion (American Diabetes Association, n.d.) and $13.8 billion for HTN (CDC, 2015; Zhang et al., 2017). A recent analysis of the national supply and demand for PCPs found Texas to have the most substantial shortage with an estimated deficit of 2,840 full-time equivalent PCPs (The United States Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Workforce and National Center for Health Workforce Analysis, 2016). My purpose in this doctoral project is to analyze the current health care policy of SOP of NPs, provide research-based evidence on a known problem, and offer a potential cost-effective quality solution to Texas legislators that advances the profession of nursing without compromising patient safety. In the following sections, I provide a brief history of the problem, relevance to the nursing practice, and my role as the DNP student in this project.

Concepts, Models, and Theories

Gail and Jacqueline's (2005) Conceptual Model for Nursing and Health Policy, revised, provides the framework for the policy issue of FPA. This framework is composed of four interacting levels that act as a guiding frame of reference for nursing and health policy. The model is intended to increase the understanding of how health policies impact prospective populations and contribute to the understanding of the

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intersection of nursing and health policy (Gail & Jacqueline, 2005). Level 1 focuses on the efficacy of the nursing practice process itself (Gail & Jacqueline, 2005). Level 2 addresses the efficacy of the nursing practice process and the efficiency of the health care delivery subsystems (Gail & Jacqueline, 2005). Level 3 assesses the equity of access to effective and efficient nursing practice processes, the nursing delivery systems and subsystems, and the equity and distributions of the costs and burdens associated with the delivery of care (Gail & Jacqueline, 2005). Level 4 is concerned with the justice and social changes and interventions that address equity and justice (Gail & Jacqueline, 2005). The goal of this framework is to influence policy development that increases “the quality of and access to nursing practice processes and nursing practice delivery systems, and also decrease the cost of delivery of those practice processes” (Gail & Jacqueline, 2005, p. 325). FPA addresses level three of Gail and Jacqueline’s (2005) Conceptual Model for Nursing and Health Policy by proposing legislation that modifies current health care administration practices to increase equity of access and cost-efficient health care.

Relevance

According to the Commonwealth Fund (2017a), compared with 11 similar, industrialized countries, the United States underperforms in access to care, equity, and health care outcomes. Texas, specifically, ranks last in access and affordability of health care compared with all U.S. states and the District of Columbia (Commonwealth Fund, 2017b). There is a noticeable gap in patients having access to care and using APRNs who function as NPs is one way to improve practice.

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In 1986, the Office of Technology Assessment of the United States Congress (OTA) was the first study conducted that found NPs provided care that was not only comparable with that of physicians but also showed that patient outcomes were also as good or better. Xue, Ye, Brewer, and Spetz (2015) found that utilizing APRNs can significantly increase access to care while decreasing health care expenditures. Wright, Romboli, DiTulio, Wogen, and Belletti, (2011); Holmes (2016); and Jeffrey (2010) also concluded that not only do APRNs provide care that is comparable with that of physicians with equivalent or better health outcomes, but they do so at lower health care costs, and this provides another avenue patients may use for access to qualified health care providers. The National Nursing Centers Consortium (2011) reported that APRNs provide care that focuses more on disease prevention, health education, and promotion; this primary form of health care is the most cost-effective. In addition, it was noted that patient outcomes were comparable to that of physicians and provided at approximately 20% reduced cost to that of physicians.

Nursing is committed to social justice and the advocacy for the welfare of the vulnerable, injured, and sick. These populations are the ones most affected by the lack of access to quality health care. According to Buerhaus, DesRoches, Dittus, and Donelan (2015), NPs were more likely than physicians to practice primary care in rural areas and manage vulnerable populations and populations receiving Medicaid. Hooker and Muchow (2015) found that using APRNs will expand access to quality, primary care providers by almost two-fold.

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The evidence begins in 1986 and continues to this day, to prove the efficacy of APRNs. Allowing FPA for APRNs is one such way to bridge the gap to improve access to care and provide high quality, cost-effective care to the populations that need it the most without compromising patient safety or the quality of care delivered.

Local Background and Context

The problem is apparent; Texas is facing a health care crisis of epic proportions. Of the 50 states and the District of Columbia, Texas ranks last in access and affordability of health care (Commonwealth Fund, 2017b). In 2017, Texas spent a combined $32.7 billion in direct costs of managing HTN and DM (American Diabetes Association, n.d.; CDC, 2015; Zhang et al., 2017). This is almost one-tenth of the total combined cost that the United States paid in 2017 for managing HTN and DM (CDC, 2017; CDC, 2019).

One solution to address this problem is to use APRNs who function as NPs. The IOM (2010) has recommended that APRNs practice to the full extent of their education and training. However, many states have laws in place that limit FPA for APRNs. The 10th amendment of the US constitution gives states the authority to regulate and legislate health professional licensure (Chesney & Duderstadt, 2017). On January 13, 2017, the Department of Veterans Affairs (VA) amended its medical practice regulations allowing APRNs to have FPA. This includes NPs, clinical nurse specialists (CNSs), and certified nurse-midwives (CNMs). This groundbreaking decision has serious implications for states that have reduced or restricted SOP for APRNs. To improve access to care and help control the rising health care costs, states need to modernize their licensure laws to allow FPA for APRNs.

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Role of the DNP Student

Thirteen years ago, I became a nurse to help patients. Along my journey, I decided that I wanted to be the one to navigate the puzzle of assessing, managing, and treating health problems. I have been a family nurse practitioner (FNP-C) in the ER for more than three years. Although I love my job, I noticed a disturbing pattern. Patients were coming to the ER for primary care. Upon clarification, patients reported they did not have a PCP due to a lack of insurance, lack of money, and a lack of available providers within their area. I questioned myself, "What can I do?" I investigated opening my own practice, but the red tape of collaborative agreements and cost halted that plan. I started researching what other interventions or solutions could potentially assist with increasing access to care while also decreasing health care costs. And that is when I decided that the current health care policy in Texas needed to be transformed. I am biased. I am an FNP-C, and this project directly affects me. Eliminating costly collaborative agreements places the full responsibility upon the NP and removes the safety net that I personally have had for the last three years. My foundation is solid, but this DNP program has given me even more tools and resources to be an expert leader and positive agent of social change. Each class has built upon the other, allowing the nurse to understand the scientific underpinnings for practice, to identify and eliminate health disparities and promote patient safety and excellence in practice, know how to translate research into practice, use information systems/technology to support and improve patient care and health care systems, influence health care policy, know how to effectively collaborate with other professionals, implement clinical prevention and

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population health activities to improve the nation's health, and to become life-learners that continuously strive to improve the health care system (AACN, 2006). One whisper mixed with one-thousand others becomes a giant roar. Change starts now.

Summary

There is an obvious problem in the health care system. The lack of qualified providers, coupled with rising health care costs, has left many patients unable to obtain adequate medical surveillance. The proposed solution examines the relationship SOP laws have on both patient outcomes and financial costs to propose a cost-effective alternative that does not compromise the safe delivery of care in the form of FPA for NPs. In the following section, I discuss in more detail the collection and analysis of the current evidence.

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Section 3: Collection and Analysis of Evidence

Introduction

Rising health care costs, paired with a lack of qualified PCPs, has placed a tremendous burden on the U.S. health care system. A balance must be reached that increases access to high-quality health care and minimizes health care costs without compromising patient safety. My purpose in this doctoral project is to analyze the current health care policy of SOP of NPs, provide research-based evidence on a known problem, and offer a cost-effective solution to Texas legislators in the form of health care reformation. The following sections provide more details on the current evidence available and how this could be applied to practice.

Practice-focused Question

Texas ranks last, of all 50 states and the District of Columbia, in access and affordability of health care (Commonwealth Fund, 2017b). An analysis of the national supply and demand for PCPs found Texas to have the most substantial shortage (The United States Department of Health and Human Services, Health Resources Administration, Bureau of Health Workforce and National Center for Workforce Analysis, 2016). In 2017, Texas spent a total of $18.9 billion on managing DM (American Diabetes Association, n.d.), and $13.8 billion for managing HTN (CDC, 2015; Zhang et al., 2017). Comparatively speaking, this is almost one-tenth of the total, combined cost that the United States paid in 2017 for managing both DM and HTN (CDC, 2017, CDC, 2019). Inadequate access to care directly and negatively affects patient outcomes. There is a gap in access to health care for Texans. My purpose in this

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DNP project was to examine the relationship and impact SOP has on patient outcomes and health care costs associated with HTN and DM and provides compelling research supported evidence to assist in persuading Texas legislators on the need for health care reformation.

Sources of Evidence

The evidence for this project is derived from research studies that address the topic of NP SOP and patient outcomes associated with HTN and DM and NP SOP and health care costs. This systematic review of literature was conducted by searching electronic nursing and allied health science databases CINAHL, Medline, and PubMed. Additional evidence will be obtained from official governmental websites, such as the CDC, publicly disseminated reports, such as the Commonwealth Fund, and other public information that will be relevant to this project. This data was needed to identify and appraise the current, primary evidence available to answer the question: What is the effect of FPA on patient outcomes and healthcare costs, and how can this evidence be useful for Texas, a restricted practice state? This analysis aimed to provide research-supported evidence to assist in persuading Texas legislators on the need for health care reformation in the form of FPA for NPs.

Published Outcomes and Research

The following electronic nursing and allied health databases were searched to collect evidence: PubMed, Medline, CINAHL, Cochrane Library, and Google Scholar. The key search terms that I used were "advance practice registered nurse," "nurse practitioner," "patient outcomes," "state regulations on scope of practice," "scope of

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practice regulation," "diabetes outcomes," "hypertension outcomes," and "family practice." The time frame searched was from January 1, 2010, to the present, and only relevant studies conducted in the United States and published in English were included. This is due to the different regulatory issues of other countries. Additionally, statistics from the Commonwealth Fund, CDC, and the ADA were used to describe the practice problem adequately. This data was needed to identify and appraise the current, primary evidence available to answer the question: What is the effect of FPA on patient outcomes and health care costs, and how can this evidence be useful for Texas, a restricted practice state?

Analysis and Synthesis

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram was utilized to record and track the current evidence that met the inclusion criteria, as I described in the previous section. Studies that have missing data or those that did not use statistical methods to adjust for confounders were excluded as this diminishes the validity and credibility of the study findings. The Revised Standards for Quality Improvement Reporting Excellence (SQUIRE 2.0) was utilized to organize and evaluate the relevant studies.

Summary

This systematic review was conducted in accordance with Walden University guidelines to review, analyze, and synthesize the current evidence to support this DNP project. This data was then used and formulated into a policy brief to inform Texas

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legislators. In the following section, I discuss in detail the findings, implications for practice, recommended solution, and the strengths and limitations of this project.

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Section 4: Findings and Recommendations

Introduction

The lack of qualified primary care providers, in conjunction with ever-increasing costs of health care, have compromised access to care. Texas ranks last in access and affordability of health care as compared to all U.S. states and the District of Columbia (Commonwealth Fund, 2017b). In 2017, Texas spent a combined $32.7 billion in direct costs of managing HTN and DM (American Diabetes Association, n.d.; CDC, 2015; Zhang et al., 2017). This is almost one-tenth of the total combined cost the United States paid in 2017 for managing HTN and DM (CDC, 2017; CDC 2019). Additionally, Texas has the most substantial estimated PCP deficit as compared with all 50 states (The United States Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Workforce and National Center for Health Workforce Analysis, 2016). Lack of access to care directly impacts patient outcomes and health care costs. My purpose in this DNP project was to examine the relationship SOP laws have on both patient outcomes and financial costs associated with HTN and DM and to propose a cost-effective alternative that does not compromise the safe delivery of care in the form of FPA for NPs.

Finding and Implications

This search identified 168 published articles which were screened for eligibility by title and abstract. After removal of duplicates, 80 articles were further assessed for eligibility based upon examination of the full articles. A flow diagram of the search and

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study selection and reasons for exclusion is shown in Figure 2. The characteristics of the selected studies are summarized in Table 1.

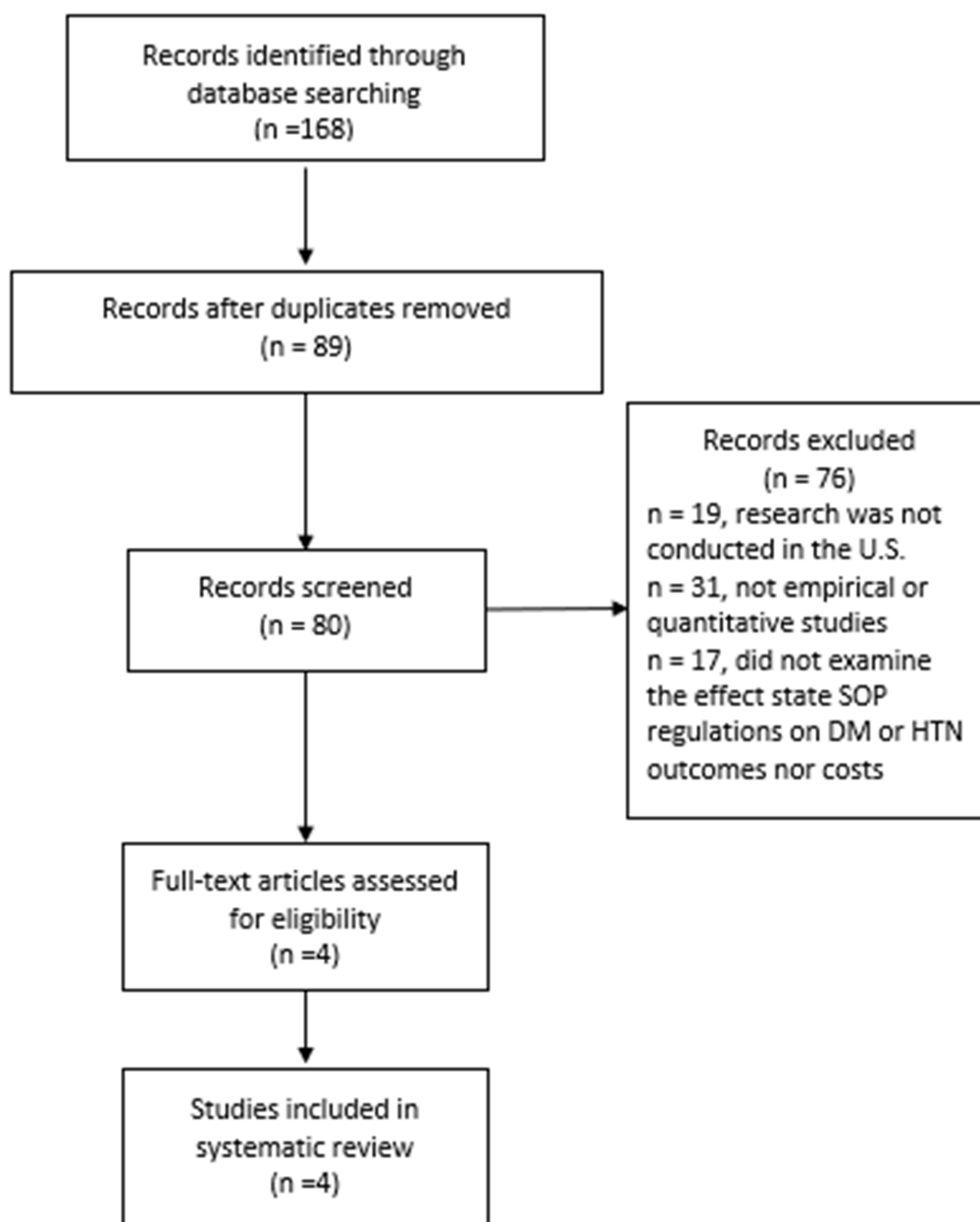

Figure 2. PRISMA flow diagram of search and study selection.

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Table 1

Characteristics of Studies

Study	Purpose	Study Design and Data	Measure for NP SOP	Statistical Analysis	Comments
Sonenberg, et al., 2017	Explore NP SOP regarding access to care and health outcomes of DM, HTN, and obesity in Four states. CO and UT with best health outcomes and least restrictive SOP compared to AL and MS which had the worst health outcomes and most restrictive SOP on the eve of implementation of ACA in 2010	Quantitative, descriptive study with multiple data sets, including, AANP, CDC, Kaiser State Health Facts, AHRQ, and US Census Bureau from 2010-2013	State NP SOP regulatory policy	Descriptive statistical analysis	Findings suggest that restrictive SOP may contribute to health outcome disparities. May have historical bias, findings are not generalizable.
Perloff et al., 2019	Examine the effect NP SOP on quality of care of Medicare beneficiaries on chronic disease management, cancer screenings, preventable hospitalizations, and adverse outcomes of care	Retrospective cohort design over a 24-month period from 2012 and 2013 with data from Medicare part A and B billing records	State SOP categorized according to 2013 AANP classification: full practice, reduced practice, and restricted practice authority	Retrospective cohort design, propensity-score multivariate analysis; logistic regression	Failed to identify benefits of restricting NP SOP; does not capture possibility of "incident to" billing, does not allow for other variables that may influence results: practice patterns and health care utilization, clinician and socioeconomic variables, financial incentives for ordering certain services

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(Continued on next page)

Study	Purpose	Study Design and Data	Measure for NP SOP	Statistical Analysis	Comments
Ortiz et al., 2018	Determine how clinical outcomes of older adult patients vary by level of practice autonomy (SOP)	Cross sectional study using data from RHCs providing health services in HHS Region 4 during 2013. secondary data from POS files, Medicare beneficiary's inpatient and outpatient claims, and 2013 CMS cost reports	State NP SOP; reduced practice (experimental group) and restricted practice (control group)	Propensity score matching and independent t-Test	No significant differences between groups; only 1 year of data; did not allow for the subtle variations within the SOP category
Grimes et al., 2018	Examine the NP SOP on HTN and DM outcomes in patients in FQCHCs	Cross sectional analysis using data from state level aggregated reports from BPHC between 2010 and mid 2013	2010 NAM report that characterizes APRNs: 1) requirement for physician involvement in prescriptions, 2) requirement for on-site oversight by physicians, 3) quantitative requirements for review of APRN charts, 4) maximum APRN to physician rations	"The differences are actual differences between the two groups of states; therefore, statistical inference tests are not needed".	Any statistical difference is based upon reader interpretation

Only 4 of the 168 identified articles analyzed the effect NP SOP has on patient outcomes associated with HTN and DM. Interestingly, all four studies found no significant difference in patient outcomes, regardless of SOP (Sonenberg & Knepper 2017; Perloff, Clarke, DesRoches, O'Reilly-Jacob, & Buerhaus, 2019; Ortiz et al., 2018; Grimes et al., 2018). This is noteworthy as advocators for restricted NP SOP are vocal in their viewpoint that more physician oversight with restricted SOP leads to improved patient outcomes. The current evidence does not support this. This finding is consistent

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with previous studies that analyzed HTN and DM outcomes with NPs versus physicians and found comparable if not better outcomes in patients with NPs managing their care (Jackson, Smith, Edelman, Woolson, Hendrix, Everett, … Morgan, 2018; Wright, Romboli, DiTulio, Wogen, & Belletti, 2011; Colon, 2010).

Unfortunately, none of the identified articles specifically analyzed how NP SOP affects the health care costs associated with HTN and DM. However, several studies examined how NP SOP affects overall health care costs. Chattopadhyay and Zangaro (2019) found that allowing full NP SOP has the potential to save $44.5 billion annually in Medicare costs in the US. Spetz, Parente, Town, and Bazarko (2013) examined the economic impact NP SOP has on costs in retail clinics where NPs managed care and found that the costs were highest in states with the most restricted SOP. Hooker and Muchow (2015) found that allowing full NP SOP would save more than $729 million over ten years in Alabama.

An important implication for state policymakers is that the current evidence indicates that state regulations restricting NP SOP do not lead to improved patient outcomes. Furthermore, allowing full NP SOP appears to have a substantial financial impact, significantly decreasing health care costs. Legislation that allows full NP SOP provides a cost-effective, safe alternate delivery of care that does not compromise patient safety.

Recommendations

The proposed recommendation to address the gap in practice is in the form of health care reformation by allowing FPA in Texas. Safreit’s work (as cited by Chesney

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& Duderstadt, 2017, p. 724) found that there are three main themes of restrictive NP SOP practice states: (1) history and unwillingness to change the status quo; (2) lack of legislator and consumer awareness of APRNs' roles, knowledge, and abilities; and (3) organized medicine's persistent opposition to expanding legal practice authority.

Chesney and Duderstadt (2017) posit that advocates for full NP SOP should focus on conveying a message that FPA is a cost-effective strategy to increase access to high-quality care that does not compromise patient safety. VanBeuge and Walker (2014) emphasize the following when advocating for FPA for APRNs: set priorities and keep them simple; secure a legislative champion; utilize lobbyists; seek guidance and support from other national organizations such as the American Association of Retired Persons (AARP) and the American Association of Nurse Practitioners (AANP); and finally collaborate, communicate and be persistent; change is not easy, but it will never occur if there is no voice to be heard. Appendix A illustrates the basic steps of the Texas legislative process.

Strength and Limitations of this Project

The findings of this review must be interpreted within the context of the strengths and limitations. This review is strengthened by the findings which are consistent with previous evidence demonstrating the cost-effective, high-quality care provided by NPs that produces comparable, if not better outcomes than those of physicians (Chattopadhyay & Zangaro, 2019; Jackson et al., 2018; Grimes et al., 2018; Holmes, 2016; Barnes et al., 2016; Jeak & Bailey, 2015; Hooker & Muchow, 2015; Xue et al., 2015; Spetz et al., 2013; Yong-Fang et al., 2013; Wright et al., 2011; Colon, 2010). The

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specified time frame allowed for current studies to be included and decreased the possibility of the inclusion of studies that may no longer have relevance to NPs.

There are some limitations to this review. First, there were only four studies that evaluated NP SOP on patient outcomes associated with HTN and DM. The small number of studies may not have yielded an accurate representation of results, and more rigorous research is needed. Although all the studies evaluated the impact NP SOP has on outcomes, there was methodological heterogeneity with variability in the study designs and subsequent risk of bias. None of the studies were able to assess for "incident to" billing, which may also confound the results. Furthermore, all studies utilized three levels of practice as described by AANP; however, there is much more variation in real-world practice. Future studies should focus on how SOP regulations affect NP patient outcomes and serve as evidence for promoting positive social change in the form of health care legislation reformation.

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Section 5: Dissemination Plan

Plan for Dissemination

My purpose in this DNP project was to provide research-based evidence on a known problem and offer a potential cost-effective quality solution to Texas legislators that advances the profession of nursing without compromising patient safety in the form of health care reformation. VanBeuge and Walker (2014) developed a detailed, guiding framework for nurses interested in developing and affecting legislative policies based upon their own legislative journey in advocating for FPA for the state of Nevada. It begins with setting a clear, concise, and straightforward objective: improving access to care.

To disseminate these results most effectively, the first step is in the form of professional meetings with local, state, and national nursing advocacy groups. Collaborating with large organizations allows for amplification of the message and lends credence to the cause. The North Texas Nurse Practitioner (NTNP), The Texas Nurse Practitioners (NTP), and The American Academy of Nurse Practitioners (AANP) are examples of large nursing groups whose assistance and support would be invaluable to the cause.

The next step is to identify elected state representatives as these officials can be important allies in changing health policy (Chesney & Duderstadt, 2017; Adamson, Paul, & Curtis, 2011). The 10th amendment of the U.S. constitution gives states the authority to regulate and legislate health professional licensure (Chesney, 2017). It is vital to

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secure legislative champions and sponsors that can provide instrumental assistance with research, laws, and collaboration with other groups to lead authority to the cause.

It is essential to provide research that shows the efficacy of using APRNs in increasing access to care, decreasing health care costs, and providing patient outcomes that are comparable, if not better, than physicians. Redesigning health care is dependent on nursing advocating for health care policy that produces positive social change.

Analysis of Self

My purpose in this DNP project was to improve population-based health outcomes and promote positive social change using evidence-based practice principles and concepts, and professional practice standards (Walden University, n.d.; AACN, 2006). The aligned objectives of both the AACN (2006) and Walden University have helped develop the advanced competencies that I need to navigate the increasingly complex health care practice, to become a more effective leader, and to become a change agent that strives to improve patient outcomes, the health care system, and the profession of nursing.

The purpose of my DNP project was to analyze the current health care policy and examine the relationship and impact SOP has on patient outcomes and health care costs associated with hypertension (HTN) and diabetes (DM). This process has strengthened my role as a practitioner, scholar, and project manager. My role as a practitioner has allowed me to use my advance nursing expertise to devise a policy brief advocating for FPA in Texas, which has the potential to improve patient outcomes, decrease health care costs, and advance the profession of nursing without compromising patient safety. The

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research, analysis, synthesis, and dissemination of the evidence have strengthened my scholarly knowledge and competency. And finally, as the role of the project manager, I have developed and refined skills such as critical thinking, time management, and personal organization, interdisciplinary communication, problem-solving, and effective leadership. This journey has instilled a foundation and a personal value of lifelong learning for not only the advancement of the field of nursing but also for our patients and our broken health care system. I will continue to advocate for the advancement of nursing and healthcare policy through the sharing of evidence-based knowledge with healthcare policymakers.

Summary

The evidence begins in 1986 and continues to this day, to prove the efficacy of APRNs. The shortage of PCPs has not improved and continues to affect access to care. If nothing is done to address this, patient outcomes will suffer as patients will not be able to access PCPs in a timely manner for chronic disease management and preventative services. Allowing FPA for APRNs is one such way to bridge the gap of access to care and provide high quality, cost effective care to the populations that need it the most.

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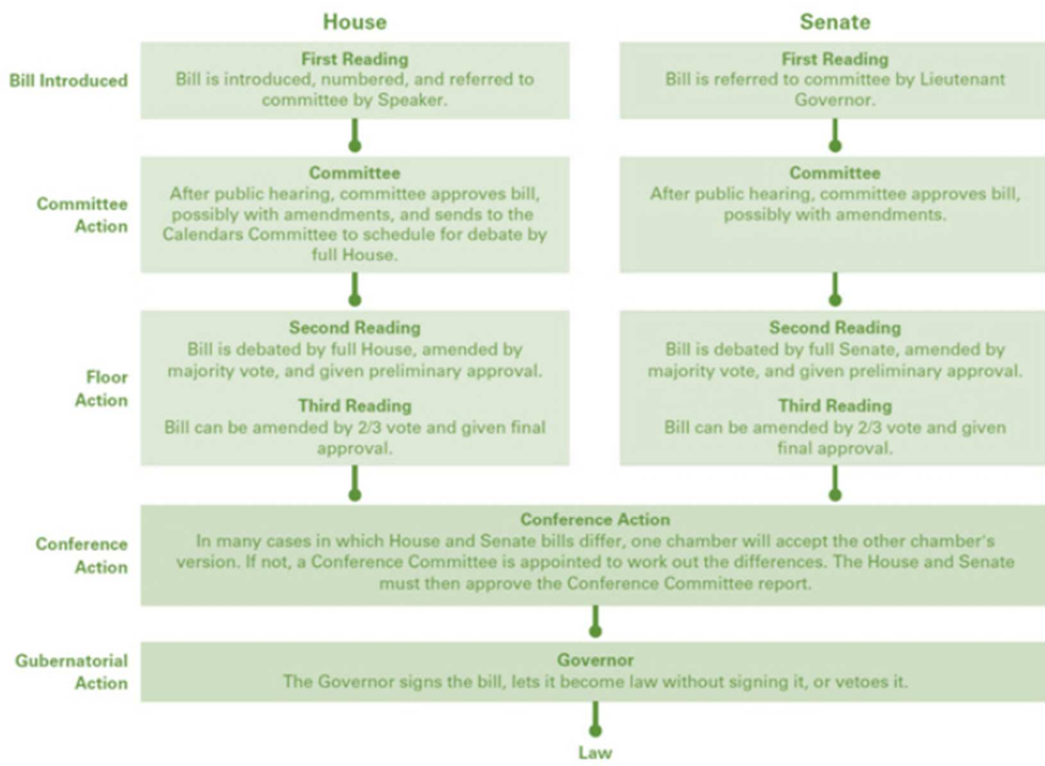
Appendix A: Basic Steps in the Texas Legislative Process



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