

IMPACT OF NURSE PRACTITIONER SCOPE OF PRACTICE REGULATION ON ACCESS TO CARE: Implications for Policy & Research from A Systematic Review

Esita Patel, RN, BSN

School of Nursing, PhD Student, Hillman Scholar
AHRQ NRSA Pre-doctoral Fellow, Cecil G. Sheps Center
epatel@email.unc.edu | 704-743-7575

The University of North Carolina at Chapel Hill

BACKGROUND

Policy reform aimed at removing state-level scope of practice (SOP) restrictions for nurse practitioners (NPs) is debated as a strategy to increase access to care because NPs are the fastest growing primary care (PC) provider, are more likely to provide care for select underserved populations than other provider types, and provide high-quality cost-effective care^{12,13,14,15}.

...but does it?

RESEARCH OBJECTIVE

This study was conducted to systematically review literature on the impact of state-level SOP regulations for NPs on access to health care services, as defined by Aday & Andersen's (1974) *Framework for the Study of Access to Medical Care*¹¹

STUDY DESIGN

We searched CINAHL, Pubmed, and EMBASE for studies published from 2006-2016 using a comprehensive keyword search strategy. The search yielded 500 studies, of which 8 met inclusion criteria. 2 additional studies were added after the initial review was conducted, yielding 10 total studies. All data were extracted into a standardized template, assessed for themes and categories, and guided by Aday & Andersen's framework (1974)¹¹. This framework was further used to examine access to care relationships across reviewed studies. PRIMSA guidelines were followed.

CONCLUSIONS

The results from this review largely support that less restrictive NP SOP regulations is associated with increased access to care. However, additional research that uses longitudinal methods would better inform recommendations for policy efforts surrounding state level NP SOP regulation.

FIGURE 1: STATE SOP FOR NPS IN MAR. 2017

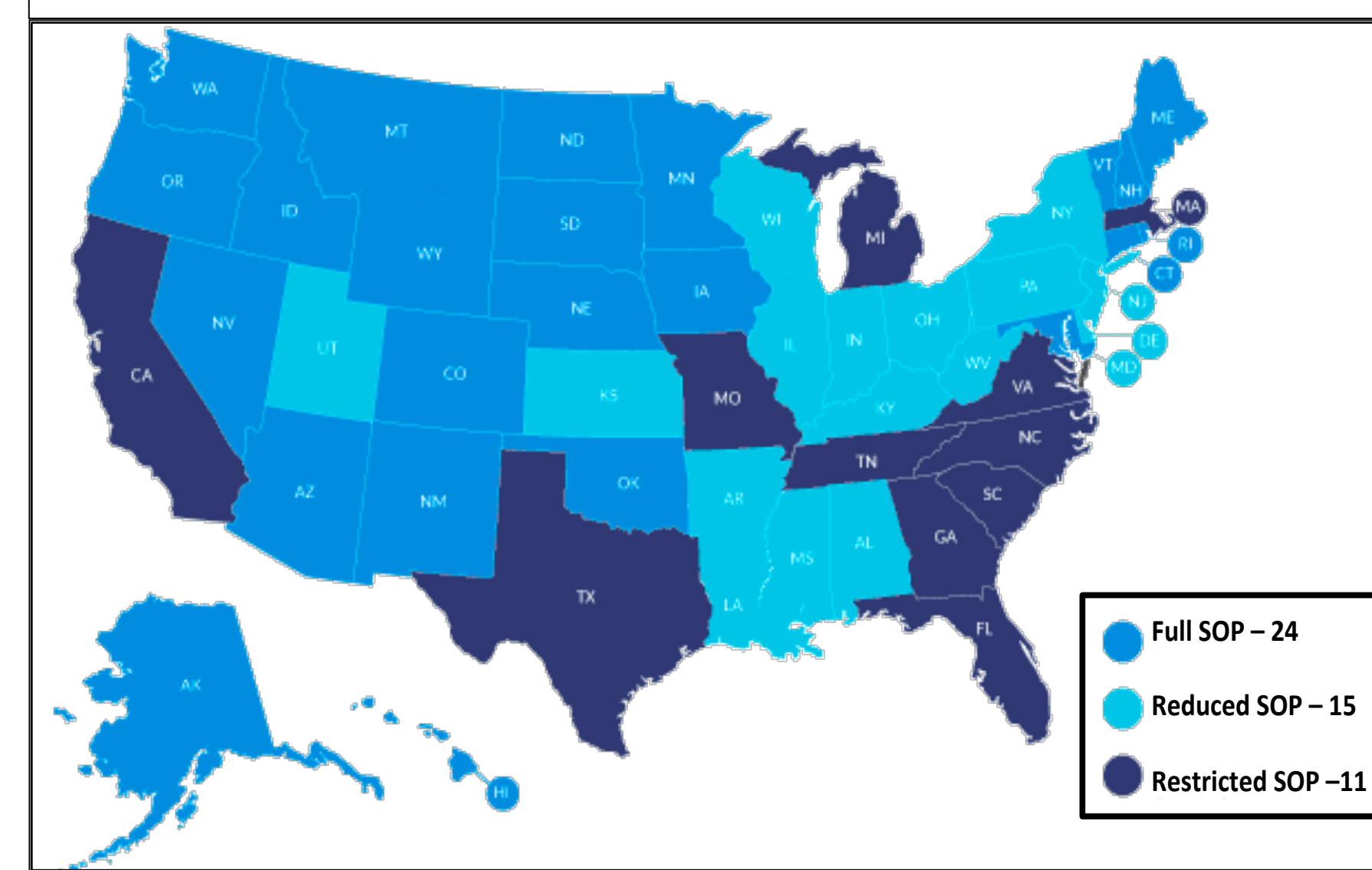


Image from: <http://nurse.org/articles/nurse-practitioner-scope-of-practice-expands-mar17/>

RESULTS

CHARACTERISTICS OF THE HEALTH DELIVERY SYSTEM: NPs were more likely to practice in states with the least SOP restrictions^{1,3,4,8}. Furthermore, there was greater growth in the number of NPs in states with the least SOP regulations^{4,8}.

CHARACTERISTICS OF THE POPULATION AT RISK: Some studies report that in states with the least restrictive NP SOP regulations, NPs were more likely to work in PC in rural and high-poverty areas and accept Medicaid^{1,3}. Contrastingly, one study found that rural areas and areas with high poverty rates have fewer NPs, and suggested that this may be due to socioeconomic environment impacting provider reimbursement⁸.

PATIENT LEVEL OUTCOMES: UTILIZATION OF HEATH SERVICES & PATIENT REPORTED QUALITY OF CARE: Patients in states with the least restrictive NP SOP regulations were more likely to use certain preventative services^{5,6,9,10}, have an NP as their PC provider⁴, have referrals to MDs⁵, have decreased rates of avoidable hospitalizations, hospital readmissions within 30 days discharge from rehabilitation, hospitalizations of nursing home patients⁷, emergency room use¹⁰, and increased overall health outcomes⁷. Contrastingly, one study with significant missing data stated that patient reported usual source of care, wait times, and difficulties accessing care were not improved with increased NP SOP regulation². Furthermore, another study reported that a larger supply of NPs, without considering other state and patient level factors, did not significantly affect healthcare utilization⁹.

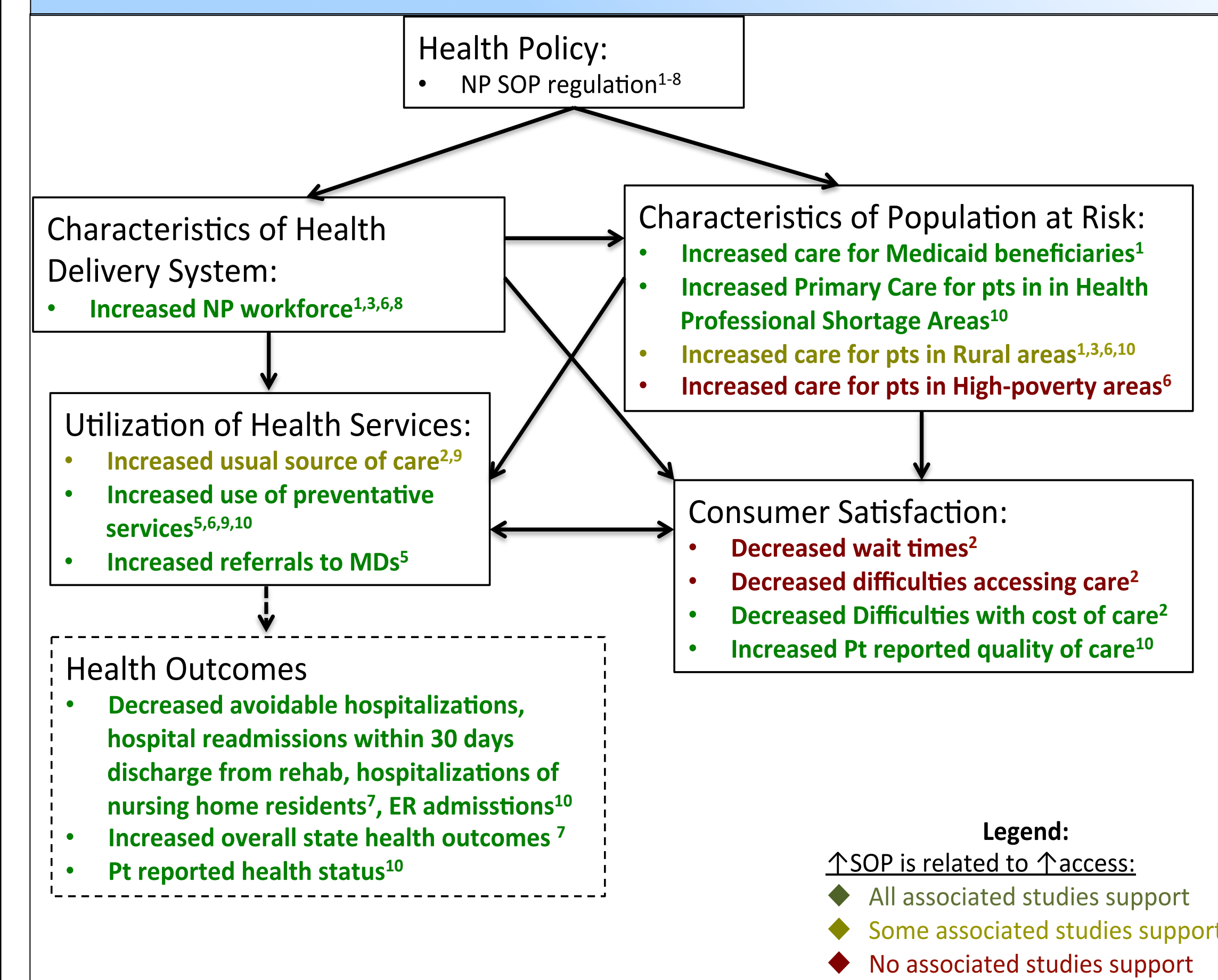
TABLE 1: LITERATURE MATRIX

Study	Purpose	Study Design	Setting	Participants
1. Barnes (2016)	To examine the effect of SOP policies on NP employment in PC and practice Medicaid acceptance	Retrospective Cross-sectional	National PC & specialty care	252657 practices
2. Cross & Kelly (2015)	To examine access in Medicare population based on state NP regulation	Retrospective Cross-sectional	National PC	15,027 Medicare beneficiaries –expanded to 45,205,096 weighted cases
3. Graves et al. (2016)	To examine if geo accessibility to PC clinicians differs across rural vs urban areas and more vs less restrictive SOP	Retrospective Cross-sectional	National PC	149,784 MDs, 149,784 NPs, 94,209 PAs, & 1,336 CNMs
4. Kuo et al. (2013)	To examine the effect of state NP SOP policies on supply of PC providers.	Retrospective, cross-sectional time series	National PC	5 percent national sample of Medicare beneficiaries
5. Kurtzman et al. (2017)	To examine the impact of state NP SOP on patient-level quality, utilization, and referrals.	Retrospective repeated cross-sectional	National Ambulatory Care	6,498 NP-patient visit units
6. Mobley et al. (2016)	To examine the predictors of mammography use among women with Medicaid	Retrospective Cross-sectional	25 States with good quality data Facilities with mammography	2,450,527 Medicaid enrollees
7. Oliver et al. (2014)	To examine the relationship between APRN SOP and various outcomes of Medicare-Medicaid beneficiaries	Retrospective Cross-sectional	National Implies PC, but not explicitly stated	Medicare-Medicaid beneficiaries – total number NI
8. Reagan & Salsberry (2013)	To examine whether state SOP regulations influence labor markets for NPs	Retrospective Cross-sectional	National PC	715 health service areas
9. Stange (2014)	To quantify effects of increased supply of non-physician clinicians on access, costs, and patterns of utilization for a population based sample	Retrospective Cross-sectional time series	23(1996); 35(2008) U.S. states based on data availability PC & specialty care	Person sample n=293,100 Office-based visits sample n=803,200
10. Traczynski et al., (2014)	To examine the impact of NP independence on population health care utilization rates and health outcomes, exploiting variation in timing of state law passage.	Retrospective repeated cross-sectional	National PC	Individuals in different states over time – total number varied per analysis and year

TABLE 2: OPERATIONALIZING ADAY & ANDERSEN'S ACCESS CONCEPTS¹¹ FOR USE IN THIS REVIEW

Characteristics of Health Delivery System	Processes of care	Workforce resources and the organization of these resources.
Characteristics of Population at Risk		Specific populations, especially traditionally underserved populations.
Utilization of Health Services	Patient level	The level and pattern of a population's use of health care services.
Consumer Satisfaction	outcomes of care	Patient reported satisfaction with available health services, including convenience, costs, coordination, courtesy, information, and quality.

FIGURE 2: RESULTS OF REVIEW CONCEPTUALIZED BY ADAY & ANDERSEN'S FRAMEWORK FOR THE STUDY OF ACCESS TO MEDICAL CARE¹⁻¹¹



PRACTICE & POLICY IMPLICATIONS

Studies that **1)** estimate the causal relationship between NP SOP and access through longitudinal research designs, **2)** assess which NP SOP policies most affect access to care, and **3)** consistently define access to care through use of access to care frameworks would enhance this body of research and better guide policymaking surrounding this topic. Federal agencies should support and use research that examines the relationship between state level NP SOP regulation and access to care to inform future policy-making.

SELECT REFERENCES

1. Barnes, H., Maier, C. B., Altares Sari, D., Germack, H. D., Aiken, L. H., & McHugh, M. D. (2016). Effects of regulation and payment policies on nurse practitioners' clinical practices. *Medical Care Research and Review*: MCRR.

2. Cross, S., & Kelly, P. (2015). Access to care based on state nurse practitioner practice regulation: Secondary data analysis results in the medicare population. *Journal of the American Association of Nurse Practitioners*, 27(1), 21-30.

3. Graves, J. A., Mishra, P., Dittus, R. S., Parikh, R., Perloff, J., & Buerhaus, P. I. (2016). Role of geography and nurse practitioner scope-of-practice in efforts to expand primary care system capacity: Health reform and the primary care workforce. *Medical Care*, 54(1), 81-89.

4. Kuo, Y.F., Loresto Jr., F. L., Rounds, L. R., & Goodwin, J. S. (2013). States with the least restrictive regulations experienced the largest increase in patients seen by nurse practitioners. *Health Affairs*, 32(7), 1236-1243.

5. Kurtzman, E. T., Barnow, B. S., Johnson, J. E., Simmens, S. J., Infield, D. L., & Mullan, F. (2017). Does the Regulatory Environment Affect Nurse Practitioners' Patterns of Practice or Quality of Care in Health Centers?. *Health Services Research*, 52(5), 437-458.

6. Mobley, L. R., Subramanian, S., Tangka, F. K., Hoover, S., Wang, J., Hall, I. J., & Singh, S. D. (2016). Breast cancer screening among women with Medicaid, 2006-2008: A multilevel analysis. *Journal of Racial and Ethnic Health Disparities*.

7. Oliver, G. M., Pennington, L., Revelle, S., & Rantz, M. (2014). Impact of nurse practitioners on health outcomes of medicare and medicaid patients. *Nursing Outlook*, 62(6), 440-447.

8. Reagan, P. B., & Salsberry, P. J. (2013). The effects of state-level scope-of-practice regulations on the number and growth of nurse practitioners. *Nursing Outlook*, 61(6), 392-399.

9. Stange, K. (2014). How does provider supply and regulation influence health care markets? Evidence from nurse practitioners and physician assistants. *Journal of Health Economics*, 33, 1-27.

10. Traczynski, J., & Udolova, V. (2013, April). Nurse practitioner independence, health care utilization, and health outcomes. In *Fourth Annual Midwest Health Economics Conference*, Madison, WI.

11. Aday, L. A., & Andersen, R. (1974). A framework for the study of access to medical care. *Health services research*, 9(3), 208.

12. Martsoff, G. R., Auerbach, D. I., & Arifkhanova, A. (2015). The impact of Full Practice Authority for Nurse Practitioners and Other Advanced Practice Registered Nurses in Ohio. RAND Corporation.

13. Institute of Medicine (US). Committee on the Robert Wood Johnson Foundation Initiative on the Future of Nursing. (2011). *The future of nursing: Leading change, advancing health*. Washington, DC: National Academies Press.

14. Stanik-Hutt, J., Newhouse, R. P., White, K. M., Johantgen, M., Bass, E. B., Zangaro, G., ... & Weiner, J. P. (2013). The quality and effectiveness of care provided by nurse practitioners. *The Journal for Nurse Practitioners*, 9(8), 492-500.

15. Naylor, M. D., & Kurtzman, E. T. (2010). The role of nurse practitioners in reinventing primary care. *Health affairs*, 29(5), 893-899.

ACKNOWLEDGEMENTS:

I would like to thank the Rita & Alex Hillman Foundation for funding my BSN and PhD through the Hillman Scholars Program in Nursing Innovation, my program director, committee member, and role model Dr. Cheryl Jones for the opportunity to be a research assistant on her project that first inspired this work, and my dissertation chair Dr. Barbara Mark for her continuous guidance through this topic and my doctoral journey.