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*School of Nursing*

# State Policy Change and Organizational Response: Expansion of NP Scope of Practice Regulations in NY State

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# Primary Care Demand

- Demand for primary care services in the U.S. is 
  - Aging population
  - Growing chronic disease burden
  - Insurance expansion

# Advanced Practice Nurse Workforce

- To meet demand for primary care, **increasing the capacity of the healthcare workforce** is necessary
- One important strategy has been the increasing utilization of the APRN workforce, in particular, **nurse practitioners** (NPs)

# Nurse Practitioners in the U.S.

- Between 2007 and 2019, the NP workforce in the U.S. has **more than doubled**<sup>1</sup>
- **By 2025, NPs will comprise 27% of all primary care providers** in the U.S.<sup>1</sup>

# Policy and Practice Barriers Faced by NPs

- **Scope of practice (SOP)**: 27 states require supervisory or collaborative relationships with physicians to provide care
- **Organizational barriers**: NPs do not have adequate access to organizational resources for optimal practice or face lack of clarity in their role within employment settings

# State Scope of Practice Categories in the U.S.

- **Full**: NPs practice independently without involvement of other clinicians<sup>2</sup>
- **Reduced**: requires NPs to collaborate with a physician
- **Restricted**: requires physician supervision for NP-delivered care



# Prior Research on NP SOP and Gaps

- **Full SOP** is related to better patient care and outcomes; **reduced and restricted SOP** limits patients' access to **timely, high-quality care**<sup>3,4,5</sup>
- Little is known about the effect of SOP on **NP practice** and **work environment** in healthcare organizations



# Nurse Practitioners Modernization Act

- Adopted by NY in January 2015
- Removed the required written practice agreement between physicians and experienced NPs—with about 2 years of experience
- Experienced NPs are able to deliver care to patients without physician involvement<sup>6,7</sup>

# Purpose

- We examined NP work environment in NY **before (2012)** and **after (2018)** the implementation of the new policy.

# Methods

- **Design: cross-sectional survey methodology** was used to collect data from primary care NPs in NY **before (2012)** and **after (2018)** the implementation of the NP Modernization Act

# Sample and Data Collection

- Primary care NPs were recruited from the NY Nurse Practitioner Association membership list
  - 278 NPs completed the survey in 2012
  - 348 NPs completed the survey in 2018
- Online survey
  - Only self-identified primary care NPs had access to the full survey

# Survey Tool

- NPs completed measures of demographics and work environment
- **Nurse Practitioner Primary Care Organizational Climate Questionnaire (NP-PCOCQ)**: validated instrument to measure NP work environment<sup>9</sup>
- Has 29 items in four subscales:
  - **NP-Physician Relations (NP-PR)**
  - **NP-Administration Relations (NP-AR)**
  - **Independent NP Practice and Support (IPS)**
  - **Professional Visibility (PV)**

# Variables

- **Independent Variables**: study time (2012, 2018) and NP experience level within employment setting
  - $\leq 3$  years of experience = “less experienced”
  - $\geq 3$  years of experience = “experienced”
- **Dependent Variable**: NP work environment
  - Measured by the NP-PR, NP-AR, IPS, and PV subscale mean scores

# Statistical Analysis

- **T-tests**: used to determine if sample characteristics and NP work environment changed between 2012 and 2018
- **Multiple linear regression models**: used to assess the relationship between year of survey administration and NP work environment
- Data analysis was performed using Stata 14.0 and SAS 9.4

# Demographic Characteristics of Sample

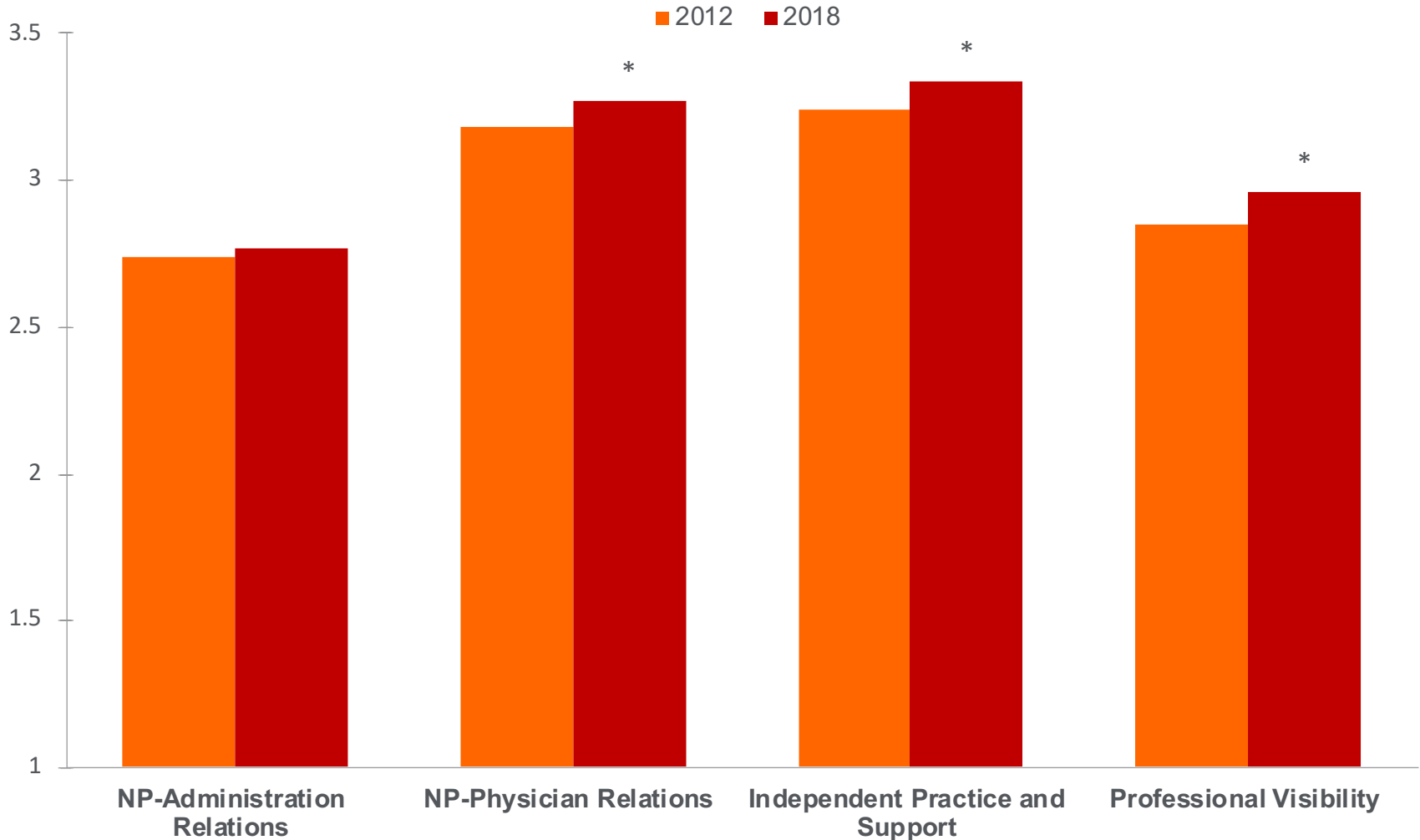
	2012 (N=278)	2018 (N=348)	p
<b>Age</b>			
Mean (SD)	52.1	53.8	.08
	% (n)	% (n)	
<b>Gender</b>			
Female	90 (222)	91 (306)	.82
<b>Race</b>			
White	79 (220)	88 (293)	.004
<b>Educational level</b>			
Master's	74 (207)	79 (276)	.15
DNP or other doctorate	9 (26)	16 (56)	.01



# NP Work and Practice Characteristics

	<b>2012</b> (N=278)	<b>2018</b> (N=348)	<b>p</b>
<b>Practice Location type</b>			<.001
Urban	35 (85)	53 (179)	
Suburban	45 (111)	20 (66)	
Rural	20 (49)	27 (93)	
<b>Practice Setting</b>			<.001
Physician's office	50 (98)	19 (65)	
Hospital-based clinic	32 (63)	45 (154)	
Community health center	13 (25)	10 (33)	
Other	5 (9)	26 (88)	

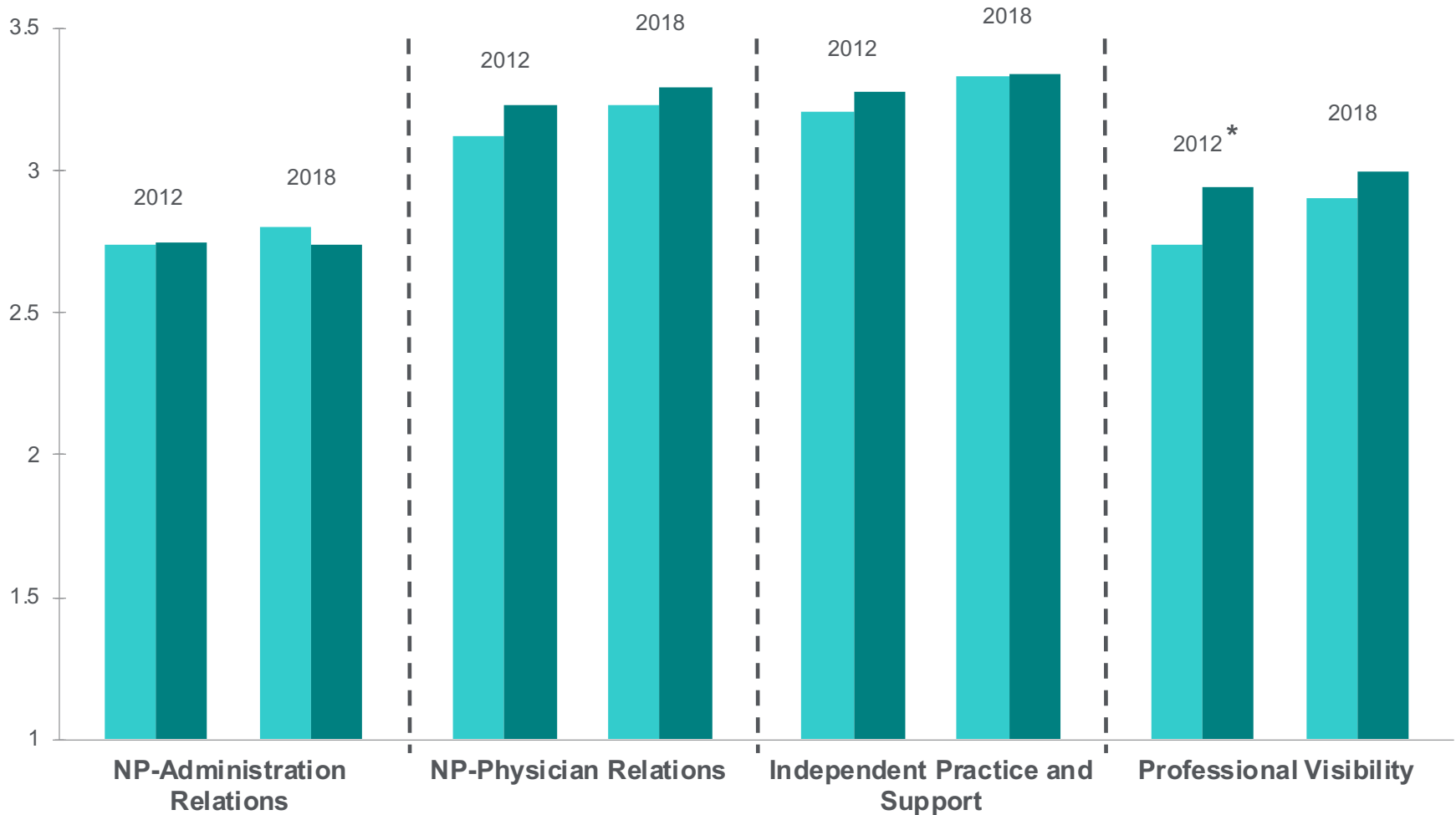
## NP Work Environment Comparison Over Time



Note. All survey items were reported using a 4 point scale ranging from “1-strongly disagree” to “4-strongly agree”. All values represent the mean score across all items on the NP-PCOCQ subscales. An independent samples t-test was used to generate p-values to test for significance. \*p <.05 ].

# NP Work Environment Subgroup Comparison By Year

■ ≤ 3 years of experience



Note. All survey items were reported using a 4 point scale ranging from “1-strongly disagree” to “4-strongly agree”. All values represent the mean score across all items on the NP-PCOCQ subscales. An independent samples t-test was used to generate p-values to test for significance . \*p <.05].

**Table 2 – Multiple Linear Regression Models Assessing Effect of Each Independent Variable on NP Mean Scores for NP-Administration Relations, NP-Physician Relations, Independent Practice and Support, and Professional Visibility**

Predictors	Outcomes							
	NP-Administration Relations (N = 619)		NP-Physician Relations (N = 618)		Independent Practice Support (N = 619)		Professional Visibility (N = 606)	
	B	95% CI	B	95% CI	B	95% CI	B	95% CI
Year 2018 (Ref:2012)	0.04	(-0.08, 0.15)	0.11*	(0.02, 0.21)	0.11**	(0.03, 0.20)	0.13*	(0.01, 0.25)
Non-White	-0.11	(-0.28, 0.05)	-0.24**	(-0.37, -0.10)	-0.20**	(-0.32, -0.07)	-0.23**	(-0.40, -0.06)
Female	-0.21*	(-0.39, -0.02)	-0.13	(-0.28, 0.02)	-0.07	(-0.21, -0.06)	-0.16	(-0.35, 0.03)
Age (Ref: < 40 years)								
40–65	-0.05	(-0.22, 0.11)	-0.11	(-0.24, 0.03)	-0.05	(-0.17, 0.07)	-0.06	(-0.23, 0.12)
v65+	-0.02	(-0.21, 0.24)	-0.07	(-0.26, 0.12)	0.002	(-0.17, 0.17)	0.05	(-0.19, 0.29)
Doctoral degree	0.17*	(0.01, 0.33)	0.17**	(0.04, 0.30)	0.12	(-0.0001, 0.23)	0.10	(-0.07, 0.26)
Length of time in current primary position (Ref: >3 years)								
<=3yr	0.04	(-0.08, 0.16)	-0.07	(-0.16, 0.03)	-0.03	(-0.11, 0.06)	-0.11	(-0.24, 0.01)
Location (Ref: Urban)								
Rural	0.07	(-0.06, 0.21)	-0.09	(-0.20, 0.02)	0.09	(-0.01, 0.19)	0.05	(-0.09, 0.19)
Suburban	-0.05	(-0.18, 0.09)	0.03	(-0.08, 0.14)	0.08	(-0.01, 0.18)	0.07	(-0.07, 0.21)
Practice setting (Ref: Physician's office)								
Community health centre	-0.22*	(-0.42, -0.01)	-0.18	(-0.04, 0.16)	0.001	(-0.15, 0.15)	-0.08	(-0.28, 0.13)
Hospital based clinic	-0.25**	(-0.39, -0.10)	-0.17*	(-0.25, -0.01)	-0.17**	(-0.27, -0.06)	-0.18*	(-0.33, -0.03)
Other	0.17*	(0.02, 0.32)	0.20	(-0.15, 0.10)	0.04	(-0.07, 0.15)	0.22**	(0.07, 0.38)
Average hours worked/week in primary position (Ref: >40 hr)								
20–40	0.05	(-0.07, 0.17)	0.06	(-0.04, 0.16)	0.05	(-0.03, 0.14)	0.07	(-0.05, 0.19)
<20 hr	0.15	(-0.01, 0.31)	0.00	(-0.13, 0.14)	0.01	(-0.11, 0.13)	0.16	(-0.01, 0.33)
Total # of NPs in practice (Ref: >= 6 NP)								
<6 NPs	0.06	(-0.08, 0.20)	-0.02	(-0.14, 0.09)	-0.07	(-0.17, 0.04)	0.11	(-0.03, 0.26)

Note. NP = nurse practitioner. B = unstandardized regression coefficient. CI = confidence interval.

\*  $p < .05$ .

\*\*  $p < .01$ .

# Results

- NPs reported **better work environments in 2018** compared to 2012, regardless of NP experience, with **significant differences in IPS, PV, and NP-PR**
- There was **no significant difference in mean NP-AR scores**
- Controlling for potential covariates, the regression model results showed there was **no difference in any of the mean subscale scores between experienced and less experienced NPs**

# Conclusions

- The study findings show that NPs reported **significantly better work environments in 2018** when controlling for individual and organizational characteristics.
  - Positive changes were observed both for experienced and less experienced NPs.
- Findings reveal important insights about the potential impact of state SOP expansion laws on organizations.

# Implications

- Policymakers should take actions to remove unnecessary SOP restrictions to improve NP work environments, which may lead to better quality of care and patient outcomes

# Limitations

- Reliance on self-reported measures
- Unable to link responses between 2012 and 2018
- No control group
- Generalizability



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