

Relationship Between Nursing Leadership and Quality of Care in ICUs: Mediating Through Patient Safety Culture

Jiali Liu, Ph.D., Liming You*, Ph.D., RN, Professor, Jing Zheng, Ph.D., RN, Lecturer, Ke Liu, Ph.D., RN, Associate Professor, Xu Liu, BSN
School of Nursing, Sun Yat-sen University, Guangzhou, China



Objectives

- To investigate the relationship between nurse managers' supportive leadership and quality of care in ICUs; and to explore the mediating role of patient safety culture in these relationships.

Hypothetical model

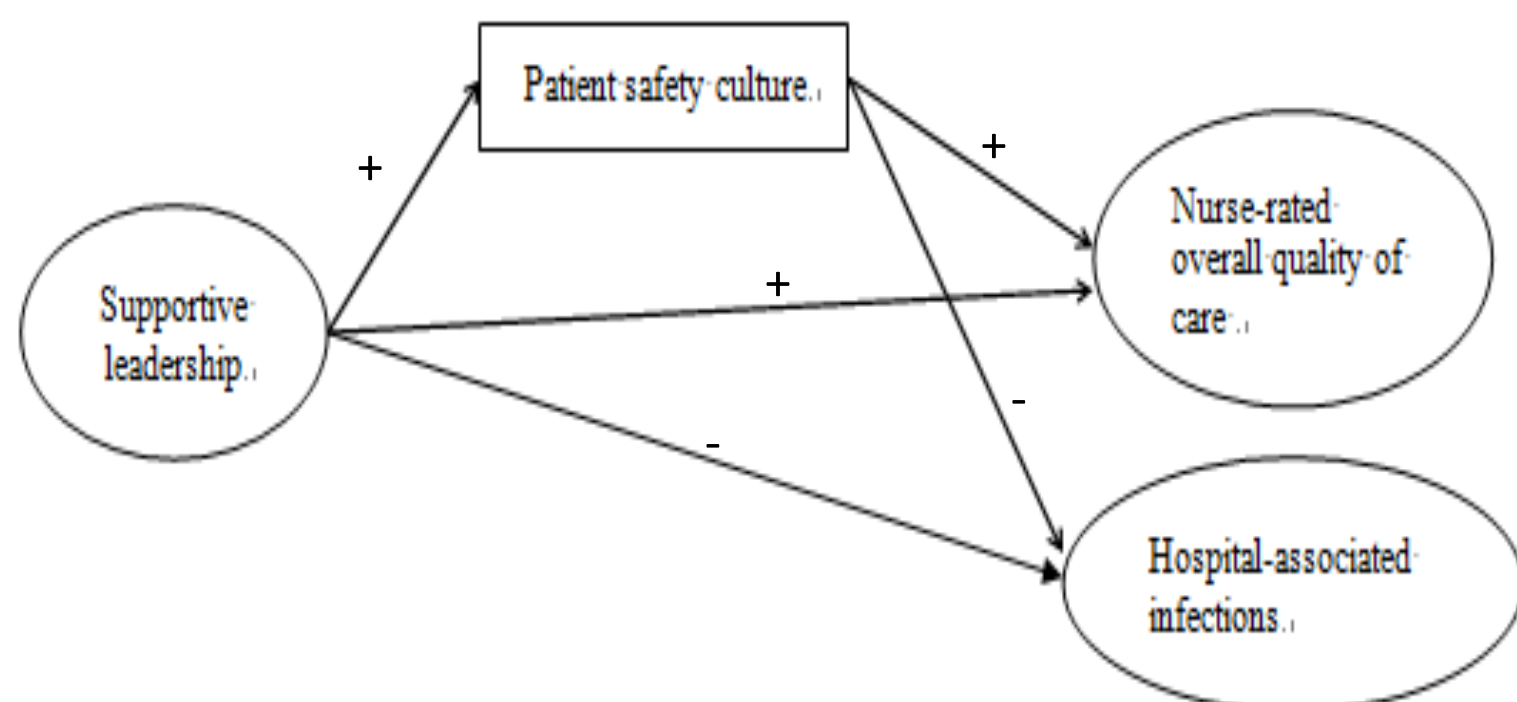


Fig. 1 Hypothetical relationships among supportive leadership, patient safety culture and quality of care

Methods

Design

- Two rounds of cross-sectional surveys.

Measures

- Managers' supportive leadership** was assessed by the nurse manager's ability, leadership and support subscale of Practice Environment Scale of Nursing Work Index.
- Quality of care** was assessed by nurse-reported overall quality of care, patient safety on their unit, nurses' confidence on nurse manager solving patient care problems, and nurse-reported frequencies of hospital-associated infections (HAIs, i.e., surgical site infection[SSI], urinary tract infection [UTI], central line-associated bloodstream infection [CLABSI], ventilator-associated pneumonia [VAP]) in last 12 months.
- Patient safety culture** was measured with seven items derived from the Hospital Survey on Patient Safety Culture, assessing whether work units regulations, managers and communications were beneficial to improve patient safety.

Data Analysis

- Structural equation modeling.

Samples and setting

- bedside nurses were surveyed in 22 ICUs, in 22 hospitals, across Guangdong province, in 2014 and in 2018 (Table 1).

Table 1. Socio-demographic characteristics of nurses

Socio-demographics	Nurses in 2014 (n=459)	Nurses in 2018 (n=552)	$t/\chi^2(p)$
Female (n[%])	357 (80.6)	456 (82.6)	0.67 (.42)
Age (yrs, mean±SD)	27.4±4.7	27.9±4.8	-1.47 (.14)
Baccalaureate degree in nursing (n[%])	242 (53.8)	350 (63.4)	12.96 (<.01)
Work experience (yrs, mean±SD)	5.9±4.8	6.1±4.9	-0.73 (.43)
Years in ICUs (mean±SD)	3.9±3.3	4.8±4.2	-3.89 (<.01)

Results

- Around half of ICU nurses perceived poor or fair overall quality of care, unsafe patient care or reduced confidence on nurse managers solving patient problems (Fig. 2).
- About 10% of nurses reported frequent HAIs (Fig. 2).

- Nurse-perceived overall quality of care, patient safety was improved, while nurses-reported frequencies of HAIs was deteriorated (Fig. 2).

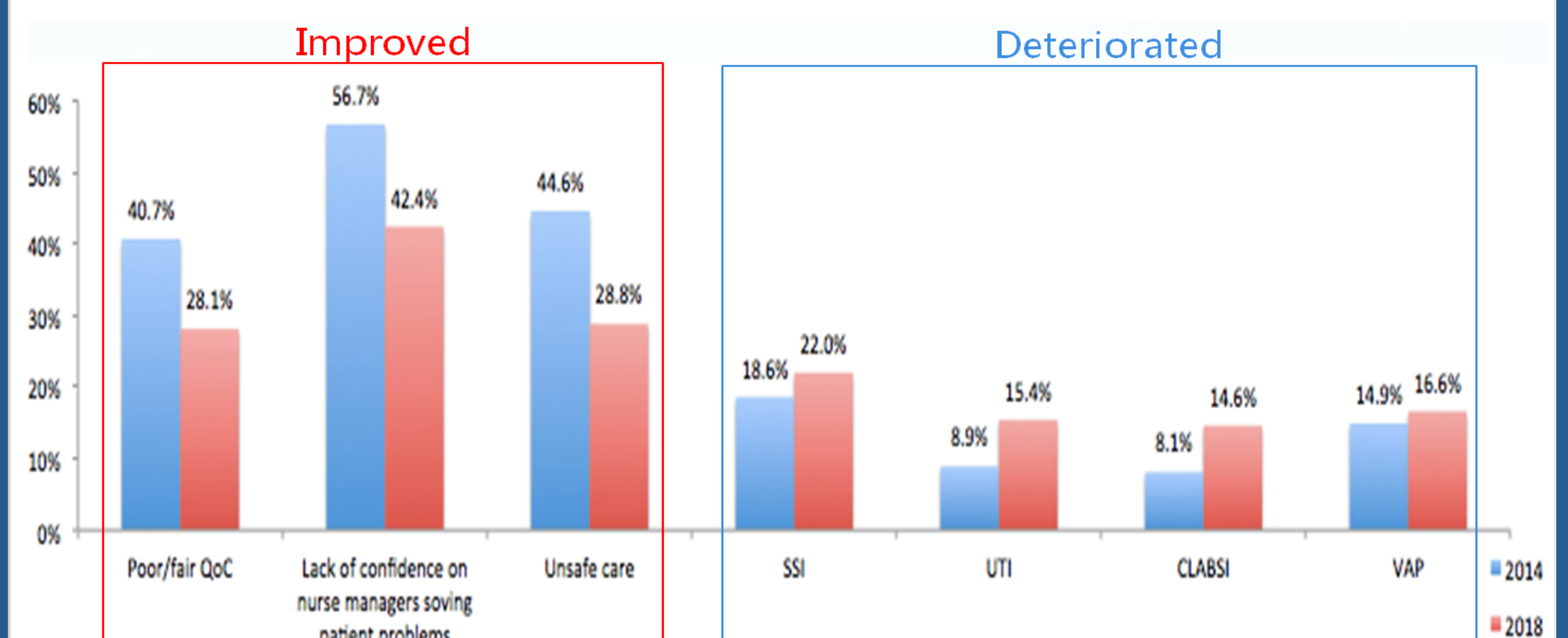


Fig. 2 Nurse-perceived quality of care in ICUs

- One third of nurses felt that mistakes were held against them; 2/5 of them do not feel free to question authority; about 1/3 reported information lost (Fig. 3).
- Patient safety culture has been improved in ICUs (Fig. 3).

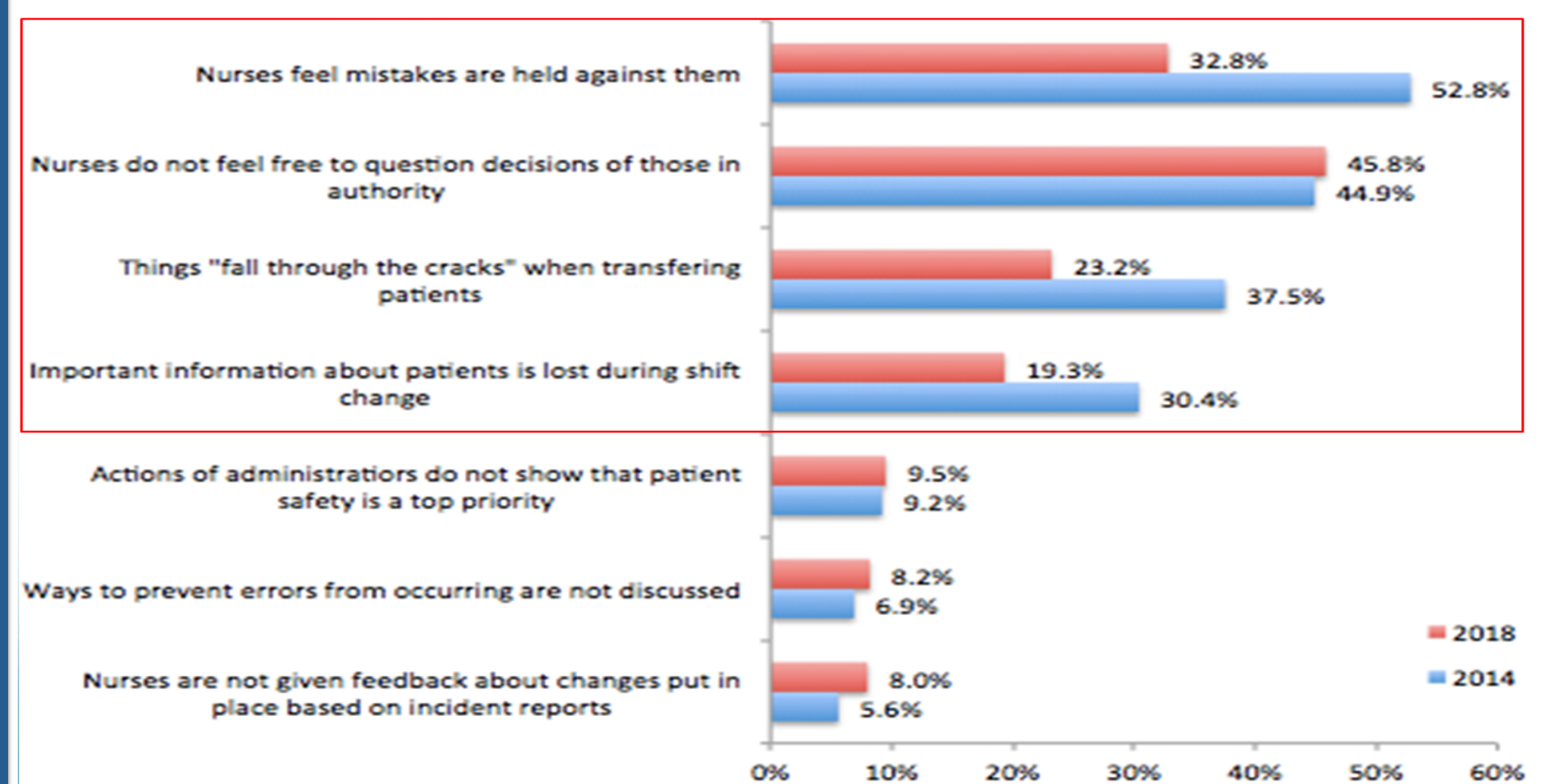


Fig. 3 Nurse-perceived patient safety culture in ICUs

- Supportive leadership was associated with better quality of care directly; and was associated with increased quality of care and decreased HAIs indirectly, through patient safety culture (Fig. 4; Table 2).

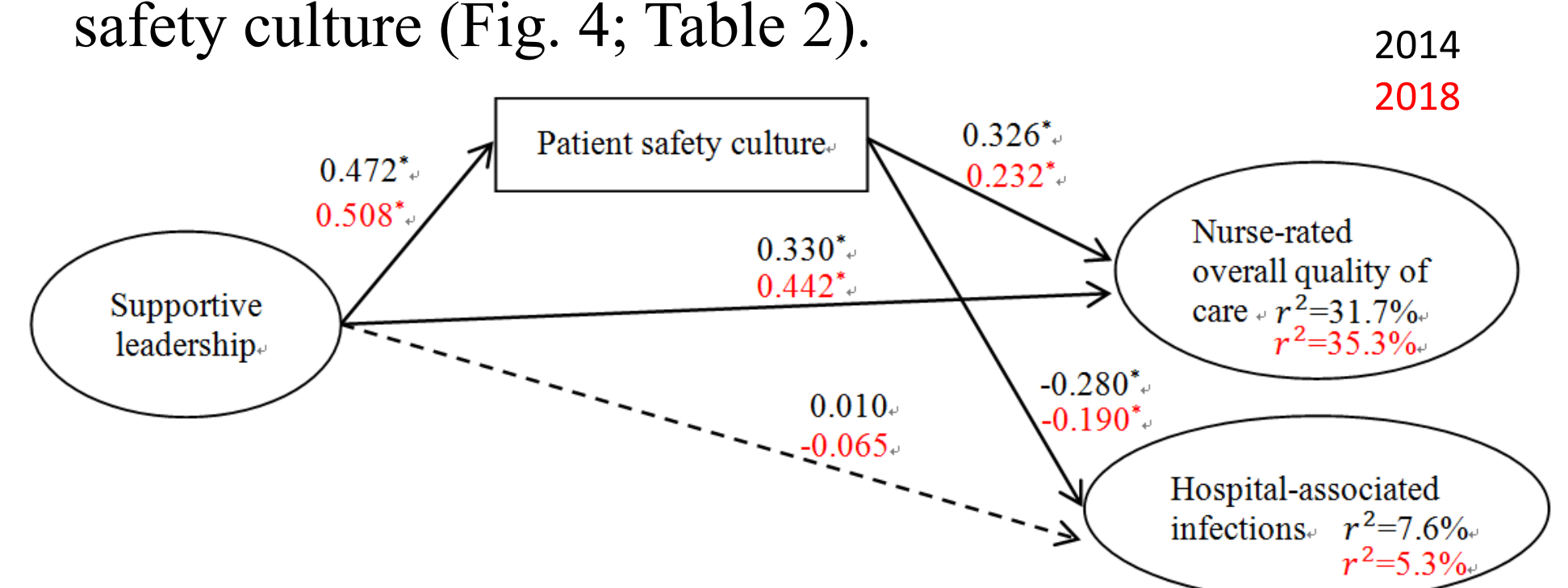


Fig. 4 Structural equation model (dash line stands for insignificant path, solid line and *stand for significant path, $p < 0.05$)

Table 2. Coefficients of indirect pathways in the model

Indirect pathways	Year	Path coefficient	p-value	Indirect/ total effects
Leadership---patient safety culture---quality of care	2014	0.154	<0.001	32.82%
	2018	0.118	<0.001	21.07%
Leadership---patient safety culture---Hospital-associated infections	2014	-0.132	<0.001	100%
	2018	-0.097	0.002	100%

Conclusion

- Quality of care needs to be improved in Chinese ICUs.
- Supportive leadership plays an important role in creating patient safety culture that foster high-quality care in ICUs.
- Nurse managers are encouraged to develop supportive leadership skills and to dedicate to build safety culture in ICU settings that facilitate patient safety.

ACKNOWLEDGEMENTS

The authors gratefully acknowledge financial support from the China Medical Board (grant 10-021, Liming You, PI).

Corresponding author: Dr. Liming You Email: youlm@mail.sysu.edu.cn