

# Better Work Environments are Associated with Lower Burnout: The Case of China

You Li-ming  
Professor and Dean  
School of Nursing  
Sun Yat-sen University

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# Objectives of the project

- Describe the nursing staffing, skill mix and nurses' roles at hospitals in China.
- Describe work environments of hospital nurses in China.
- Describe patient outcomes in China.
- Describe hospital nurse outcomes in China.
- Identify the relationship between nursing staffing, work environments and patient outcomes and nurse outcomes.

# Map of China

Locations of provinces, autonomous regions and municipalities.





# Methods

## A multi-centered survey research

### Sampling and Sample size:

- 9 sites: 6 provinces, 2 municipalities and 1 autonomous region, at least 1 P/M/A from each of the 8 comprehensive economic zones (geographic regions in Mainland China), by convenience sampling
- 20 hospitals in each site, by stratified and convenience sampling
- $\geq 4$  medical or surgical adult units (including one ICU) in each hospital, by systematic random sampling
- All staff nurses in the sampled units, and  $\geq 50$  nurses from each hospital, by cluster sampling
- $\geq 5$  patients from each unit same as nurses surveyed, and  $\geq 30$  patients from each hospital, by systematic sampling



# Instruments and data collection

- **Nurse**: China Hospital Nurse Survey (revised from the Florida version of “Pennsylvania registered nurse questionnaire”), completed by sampled nurses and returned in sealed envelopes
- **Hospital**: A questionnaire assessing hospital characteristics and staffing, completed by the department of nursing at each hospital
- **Patient**: Patient Satisfaction Scale, delivered to and collected from the sampled patients by graduate students. Data were collected on a unit in one day



# Completed survey

- Hospital: 179
- Nurse: 9774
- Patient: 6540



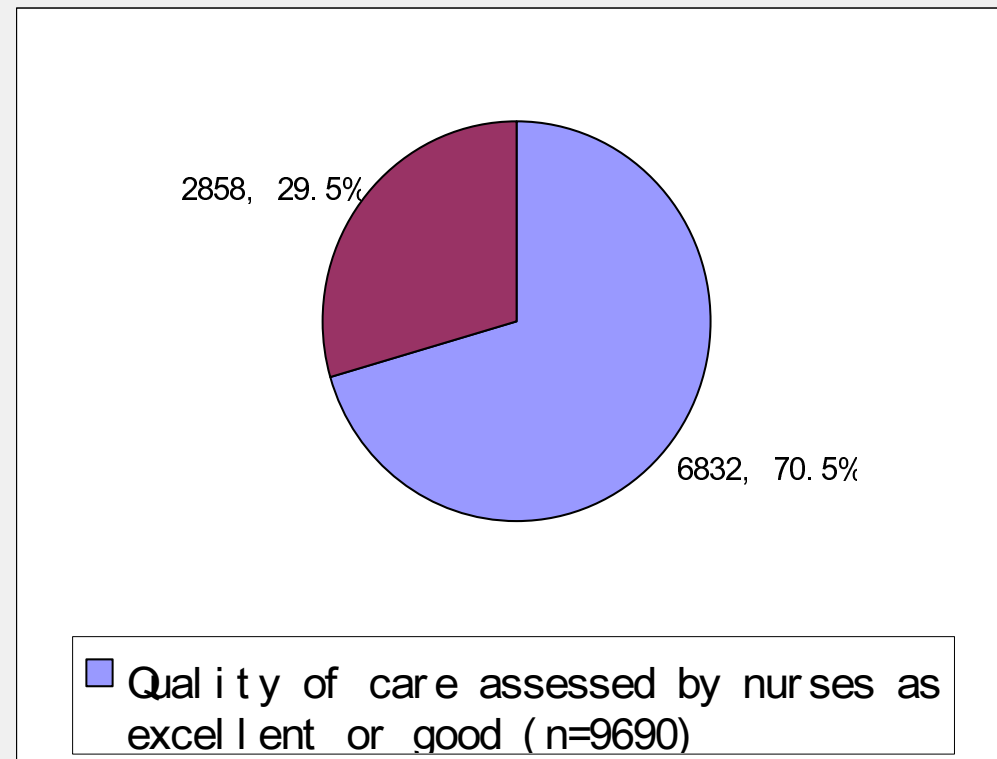
# Nursing manpower (n=170)

- Proportion of nursing staff in healthcare personnel  
48.6%±0.06 Min. 29% Max. 65%  
< 50% 105 (61.8%)  
**≥50%\*** 65 (38.2%)
- Nurse: Bed  
Mean±SD 0.61±0.15,  
Min. 0.16 Max. 1.08
- Nurse: Physician  
Mean±SD 1.35±0.29 Min. 0.63 Max. 2.28  
< 2: 1 164 (97.6%)  
**≥2: 1\*** 4 (2.4%)

\* Standards set by MOH



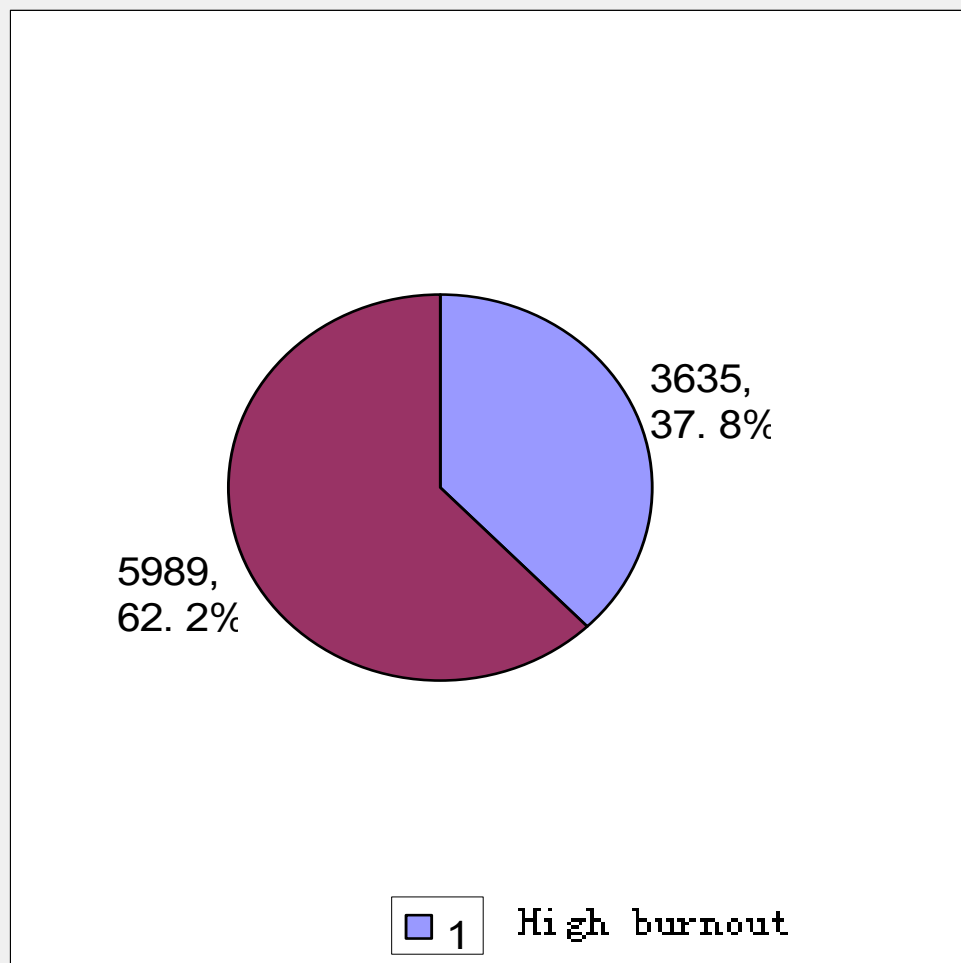
# Chart 1 Quality of care assessed by nurses (n=9690)





## Nurse Outcomes

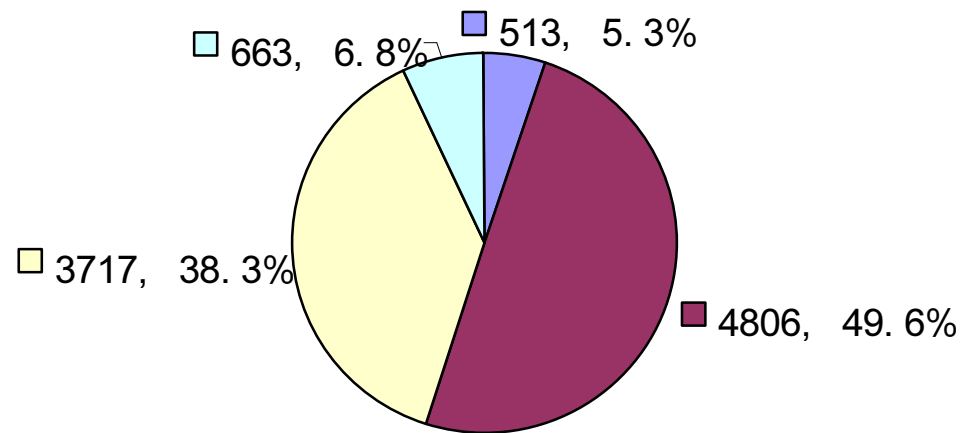
### Chart 2 Maslach burnout inventory (n=9624)





## Nurse Outcomes

### Chart 3 Job Satisfaction (n=9699)

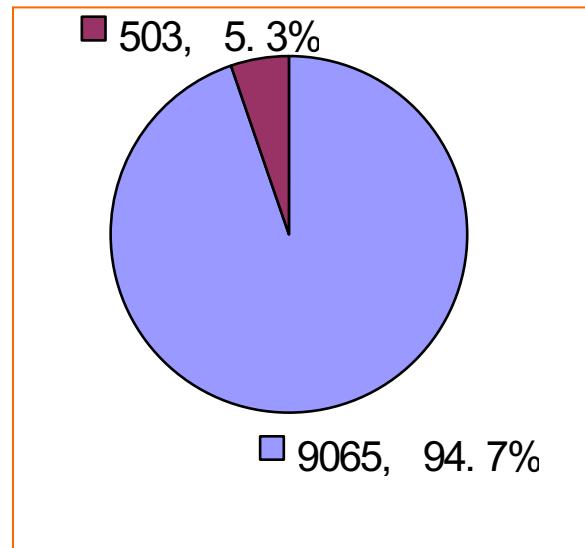


Very satisfied      Moderately satisfied  
A little dissatisfied      Very dissatisfied



## Nurse Outcomes

### Chart 4 Retention ( n=9568)



- Plan to be with the current employer in one year
- Do not plan to be with the current employer in one year

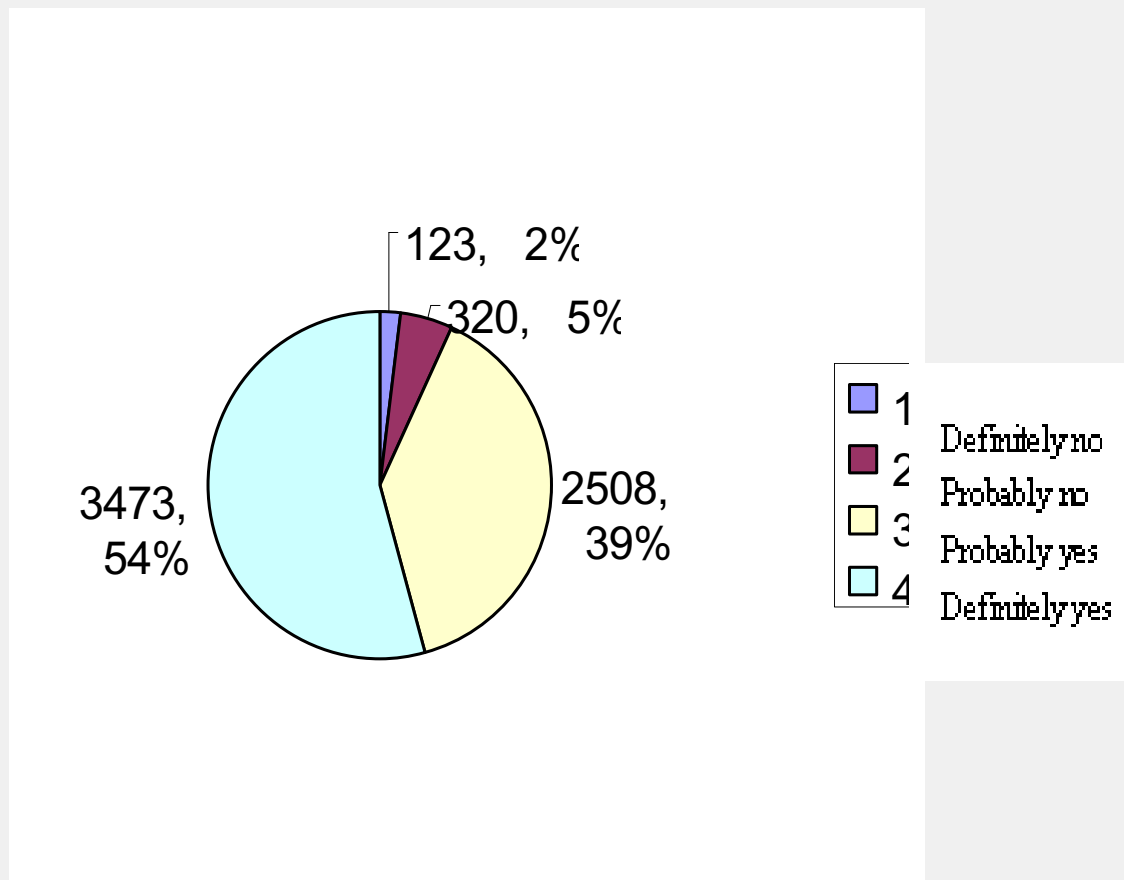


- *Although only 5.3% nurses reported intention to leave, data from 168 surveyed hospitals showed that 12372 nurses left their positions during the past 5 years. One third of them retired, and two third (66.5%) of them left because of other reasons: resigned from the hospitals (38.2%), turnover to non-nursing positions (11.3%), etc.*



## Patient outcomes

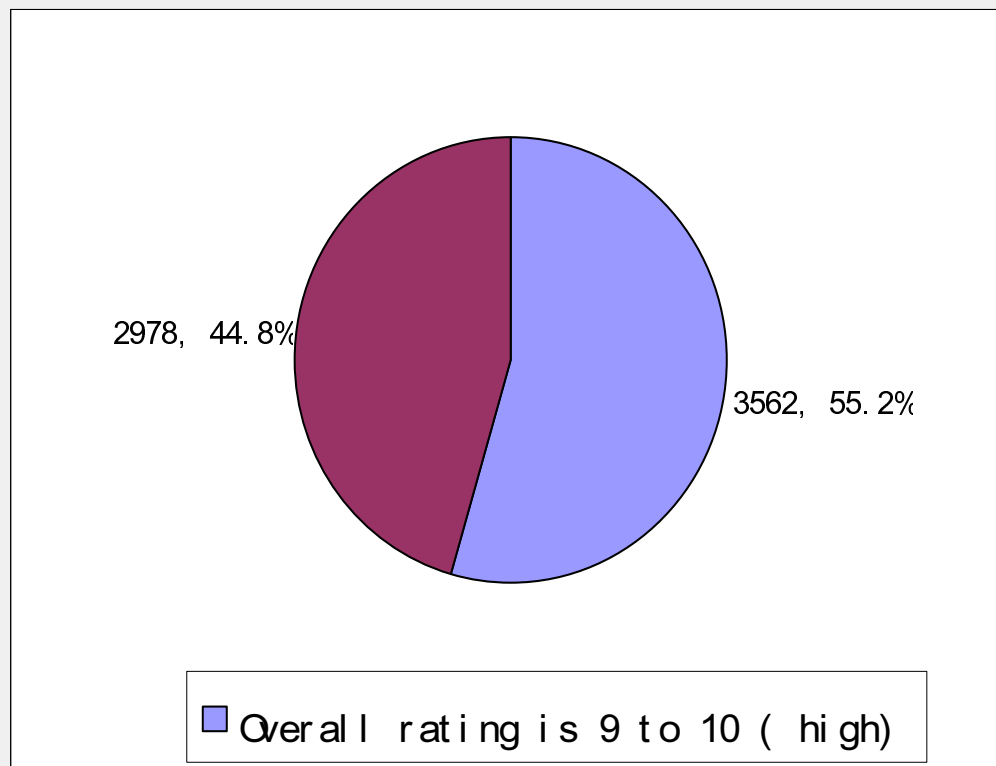
### Chart 5 Recommend the hospital to others





## Patient outcomes

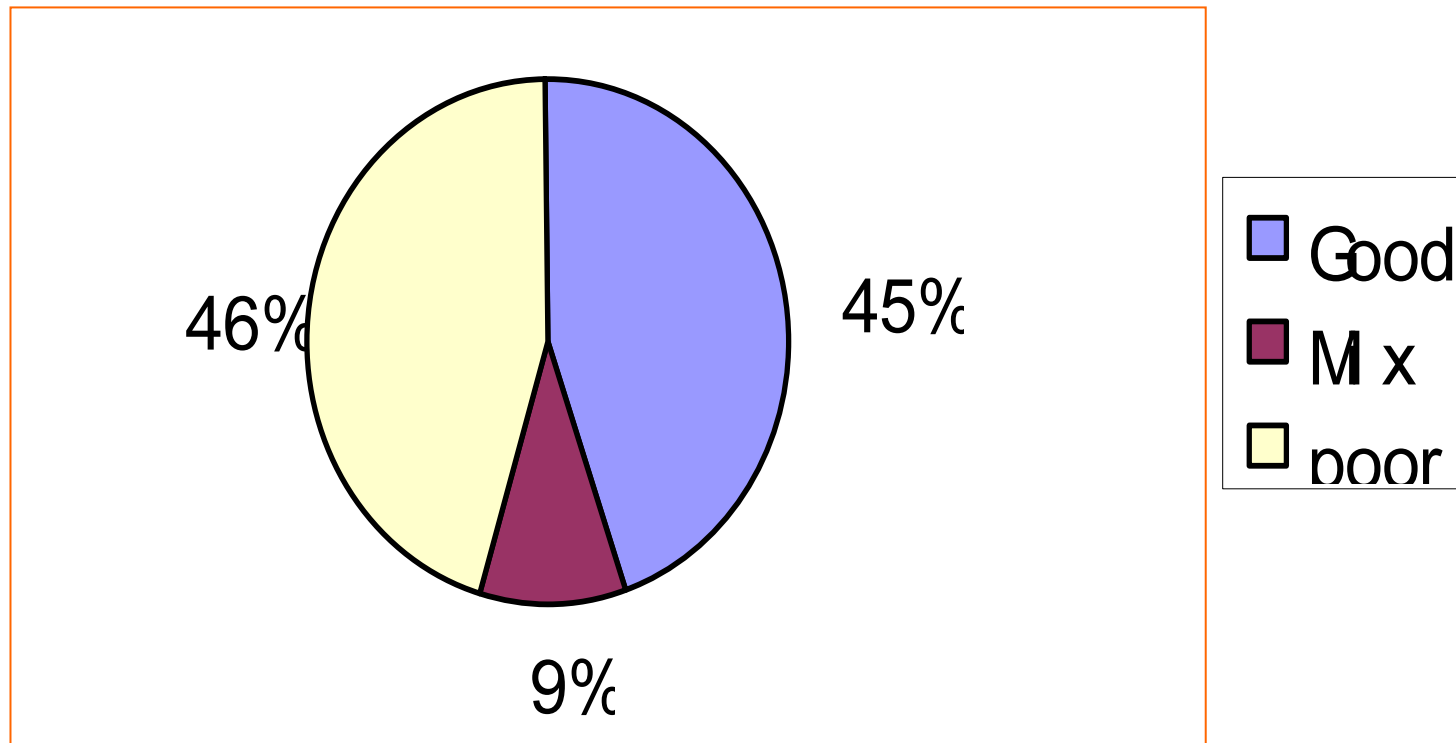
Chart 6 Patient Satisfaction ( n=6540 )





# Chart 7

## Work environments of hospitals (n=161)





# Table 1. Effects of work environments on nurse outcomes

Outcome and effect	Odds Ratio (95% Confidence Interval)	
	Unadjusted	Adjusted*
<b>Nurse outcomes</b>		
Job dissatisfaction		
Work environment	0.517(0.474-0.564) <sup>a</sup>	0.514(0.458-0.577) <sup>a</sup>
High burnout		
Work environment	0.679(0.621-0.742) <sup>a</sup>	0.685(0.609-0.771) <sup>a</sup>
Intention to leave		
Work environment	0.462(0.374-0.572) <sup>a</sup>	0.443(0.338-0.581) <sup>a</sup>

- a  $P < 0.001$
- Adjusted factors include: Nurses' demographic variables: age, marital status, having child (younger than 18 yrs), working year, employment status, highest educational level. Hospital characteristics: level, location, economic zone, technology complexity, Workload variables: overtime or not, nurse to patient ratio, work in ICU.





## Effects of work environments on nurse outcomes

The odds of nurse being dissatisfied with their jobs, being burned out, and intention to leave were lowered by **48.6%**, **31.5%** and **55.7%** in hospitals with good environments compared with the nurses in hospitals with poor or mix environments, respectively.



## Table 2. Effects of work environments on patient outcomes

Outcome and effect	Odds Ratio (95% Confidence Interval)	
	Unadjusted	Adjusted*
<b>Patient outcomes</b>		
Quality of care		
Work environment	1.339(1.218-1.472) <sup>a</sup>	1.498(1.324-1.695) <sup>a</sup>
Recommendation		
Work environment	1.099(0.991-1.220) <sup>c</sup>	1.217(1.077-1.375) <sup>b</sup>
Overall rating is 9 to 10		
Work environment	1.015(0.914-1.126)	1.278(1.128-1.447) <sup>a</sup>

- a  $P < 0.001$ , b  $P < 0.01$ , c  $P < 0.1$
- Adjusted factors include: Hospital characteristics: level, location, economic zone, technology complexity. Patients' variables: gender, age, LOS



# Effects of work environments on patient outcomes

The odds of nurse assessed good quality of care, patient recommended the hospital and high overall rating of the hospital were increased by **1.5**, **1.2** and **1.3** times in hospitals with good environments compared with it were in hospitals with poor or mix environments, respectively.



# Conclusions and recommendations

**Improve work environments of nursing practice in China to decrease negative nurse outcomes: *job dissatisfaction, job-related burnout, and leaving nursing***

***Improved work environments for nurses are essential for stabilizing the workforce and enhancing nurses' competence in providing quality nursing care to the Chinese people.***



**Thanks for Your attention.**

