

# Primary Drivers of Establishing Patient Safety Culture at Traditional Chinese Medicine Hospitals

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## Abstract

This study explores the factors that affect healthcare personnel's safety culture in "Chinese Tertiary Traditional Chinese Medicine (TCM)" facilities to enhance the safety of patients and health care. The Chinese version of the "Safety Attitudes Questionnaire (CSAQ)", a survey tool was used to assess physicians' and nurses' patient safety attitudes was used to investigate this issue. This study employed the CSAQ, and 1377 questionnaires were distributed to three tertiary traditional Chinese Medicine hospitals. Respondents were medical personnel who submitted the survey through WeChat application. 461 surveys were deemed valid for analysis, resulting in a 33.48% response rate. Demographic characteristics were used as control variables in a "one-way ANOVA". The data structure was validated by utilizing confirmatory factor analysis (CFA). Subsequently, a linear regression analysis employing forward selection methodology was utilized to ascertain the predominant safety culture dimensions, also known as safety climate, that exerted the greatest influence. According to the CFA, 26 items in the CSAQ were assessed using six criteria about safety. The linear regression study showed that "working environment, teamwork climate, and job satisfaction" affect safety culture, particularly safety climate.

**Keywords:** "safety attitudes questionnaire, patient safety culture, staff of TCM hospitals, medical personnel, healthcare quality, SPSS, AMOS"

## INTRODUCTION

More than ten years ago, the "Institute of Medicine (IOM)" conducted a study titled "To Err is Human," which revealed that medical errors caused the deaths of approximately 44,000 to 98,000 patients each year. The finding suggests that medical errors have resulted in more fatalities than AIDS, car accidents, or breast cancer. According to the 1999 IOM report, the yearly costs associated with medical errors were anticipated to exceed US \$38 billion. Unfortunately, medical errors continue to become a widespread concern. According to the Institute of Medicine<sup>[1]</sup>, medical errors refer to instances where a planned activity is not executed as intended or an incorrect plan is implemented to achieve a goal. Such errors include adverse drug reactions, inappropriate transfusions, surgical injuries, procedures conducted on the wrong spot, and injuries or deaths caused by restraints, falls, burns, and other occurrences. Medical errors significantly affect hospital's reputation, which determines client demands. Medical errors may affect patients' lives, reputation, performance, and satisfaction.

Al Hammadi *et al.*<sup>[2]</sup> stated that patient safety improves healthcare quality and performance. As per the World Health Organisation, the attribute of high-quality healthcare is patient safety.<sup>[3]</sup> Li *et al.*<sup>[4]</sup> found that US, European, Australian, also South American medical practices have influenced the hospital patient safety standards worldwide. The "19th National Congress of the Communist Party" of China in 2017 highlighted the imperative to augment the healthcare systems of Chinese hospitals. The aim was to guarantee the well-being of patients, and also to improve the overall standard of healthcare provision. Consequently, hospitals worldwide have prioritized patient safety to provide excellent health care.

The "European Union Network for Quality in Health Care"<sup>[5]</sup> describes "patient safety culture" as a linked system of human and "organisational values-based practises".

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It aims to reduce patient damage from care delivery. “Patient Safety Culture (PSC)” is an essential component of organizational culture that provides insight into the perceptions and management of patient safety by members of an Institution.<sup>[6]</sup> Medical treatment and service delivery require a patient safety culture. Patient safety reduces the red-code accidents, morbidity, readmission rates, and adverse events.<sup>[7-10]</sup> However, Huang *et al.*<sup>[11]</sup> recommended that hospital committee’s regularly examine medical staff’s patient safety perceptions to improve patient-centric services. Kim<sup>[12]</sup> observed that encouraging doctors to prioritize patient safety reduces medical errors, malpractice, and staff injuries.

Kenneth Milne *et al.*<sup>[13]</sup> conducted a study to evaluate the patient safety culture in maternity units across Canada. The study involved the administration of a survey of 143 hospital personnel. The study’s results suggested that enhancements in safety culture yielded noteworthy favourable consequences. The results of this study revealed several positive outcomes, such as improved collaboration among healthcare personnel, heightened regard for individual objectives, enhanced communication pathways, and an increased focus on ongoing education within the healthcare setting.

In health care, communication failures and ineffective teamwork account for many errors. In addition, poor communication and teamwork contribute to patient safety. The attainment of high reliability and safe delivery necessitates the implementation of effective teamwork and communication. Collaboration and communication can improve healthcare quality and safety. These practices reduce patient harm, enhance inter-professional cooperation, set goals, reduce workload, and satisfy personnel and patients. Hospitals should evaluate patient safety and encourage teamwork to establish a secure system.

The Safety Attitudes Questionnaire (SAQ) has been extensively studied by Sexton *et al.*<sup>[14]</sup> to assess the attitudes of medical personnel toward patient safety. The present survey has been tailored to assess patient safety and clinical recovery, as emphasized by Colla *et al.*<sup>[15]</sup>. The utilization of this approach has demonstrated its worth in evaluating the viewpoints of healthcare practitioners concerning diverse facets associated with patient safety.

Sexton *et al.*<sup>[14]</sup> describe the “Safety Attitudes Questionnaire (SAQ)” as 30 items that examine six categories. These include cooperation, safety, job satisfaction, stress awareness, management, and working conditions. Three investigations confirm the SAQ’s categorization into three dimensions, demonstrating its comprehensiveness in collecting healthcare professionals’ patient safety views. After Sexton *et al.*<sup>[14]</sup>, Lee *et al.*<sup>[9]</sup> evaluated the Chinese “Safety Attitudes Questionnaire (CSAQ)”, utilizing forward and backward translations. The six-component “CASQ (Chinese Safety Attitudes Questionnaire)” has 30 items. Numerous healthcare quality studies have demonstrated that CSAQ exhibits both internal consistency and dependability.<sup>[11]</sup> Bujang *et al.*<sup>[16]</sup> reported a CSAQ

Cronbach’s alpha of 0.913, showing strong internal consistency. The “Safety Attitudes Questionnaire (SAQ)” components of the cooperative atmosphere, safety climate, job satisfaction, stress recognition, management viewpoints, and working circumstances had reliability values of 0.565, 0.655, 0.825, 0.880, and 0.725. Test-retest reliability was 0.934, showing stability over time.

## METHODS

### Hospital setting

This study included physicians and nurses from three different A-level Traditional Chinese Medicine tertiary hospitals in Sichuan, China. These participants were chosen because they most frequently interact with patients during medical service delivery. According to China’s hospital grade administration regulations, a tertiary A-level traditional Chinese medicine tertiary hospital has a minimum capacity of 399 beds. In 1989, the National Health Commission (NHC) defined these hospitals as providing high-quality medical care, higher education, and scientific research. The three hospitals mentioned have 43, 35, and 36 clinical departments, respectively. These hospitals employ 6,920 employees, including 3,920 doctors, 2,000 nurses, and 1,000 other staff members. These hospitals have a total of 3,200 hospital beds available. These hospitals also train healthcare workers clinically.

### Study instrument

We used the “Chinese Safety Attitudes Questionnaire (CSAQ)” to assess patient safety culture. The CSAQ has 30 elements in six dimensions: “collaborative atmosphere, workplace safety climate, job satisfaction, stress recognition, management viewpoints, and working situations”. These characteristics address Chinese healthcare practitioners’ safety culture perceptions. Table 1 shows these dimensions also the objects that relate to them. The factor of teamwork atmosphere assesses employee interactions and cooperation within the organization. The safety climate dimension assesses the extent of organizational commitment to patient safety. The job satisfaction dimension assesses favourable attitudes towards employment. The dimension of stress recognition investigates the awareness and perception of stress about job performance. The factor of management perceptions represents administrator approval and support. Working circumstances assess workplace quality. The safety environment assesses worker and patient safety. It assesses employees’ views on workplace safety and patient safety. The term “climate” refers to an organization’s general attitude and disposition towards patient safety. Surveys are widely used to gauge culture based on the idea that an organization’s culture is reflected in its climate. Li *et al.*<sup>[17]</sup> support this view.

Thus, this study assesses patient safety culture using a safety climate. Conversely, independent factors affect “safety, teamwork, job satisfaction, stress recognition, management perception, and working conditions”. These independent criteria affect patient safety and climate. These elements’ effects on the patient safety culture are being studied. The CSAQ assessed agreement

using a “5-point Likert scale” ranging from “Strongly disagree” to “Strongly agree”. Frequent grades from “Never” to “Always” were utilised to measure patient safety qualities.

Averaging the results of the items assessing that specific dimension yielded the scores for each of the six dimensions. Two medical students with backgrounds in patient safety translated the CSAQ into Chinese. Two additional academics with patient safety, medicine, and English backgrounds reviewed and double-checked the translation. Table 1 shows the dimensions and items of the Chinese patient safety attitudes.

### **Date collection**

The study was pilot tested by surveying 40 healthcare workers. From 5th to 11th may 2022, three Traditional Chinese Medicine (TCM) facilities provided Wechat data for the study. 1,377 questionnaires were distributed. The response rate was 33.49% for 461 valid surveys.

### **“Ethical Consideration”**

The Ethics Committee at Chengdu University of TCM Hospital in Chengdu City, Sichuan Province, China, approved the study with the code 022KL-036. The committee gave their authorization to use the data for research.

**Table 1: The Chinese version of the SAQ**

Dimensions/Items
<b>1. Teamwork climate</b>
A1. Nurse input is well-received in this clinical area
A2. In this clinical area, it is difficult to speak up if I perceive a problem with patient care
A3. Disagreements in this clinical area are resolved appropriately
A4. I have the support I need from other personnel to care for patients
A5. It is easy for personnel here to ask questions when there is something that they do not understand
A6. The physicians and nurses here work together as a well-coordinated team
<b>2. Safety Climate</b>
B1. I would feel safe being treated here as a patient
B2. Medical errors are handled appropriately in this clinical area
B3. I am familiar with this healthcare area’s patient safety channels.
B4. I receive appropriate feedback about my performance
B5. In this clinical area, it is difficult to discuss error
B6. I am encouraged by my colleagues to report any patient safety concerns I may have
B7. The culture in this clinical area makes it easy to learn from the errors of others
<b>3. Job satisfaction</b>
C1. I like my job
C2. Working here is like being part of a large family
C3. This is a good place to work
C4. I am proud to work in this clinical area
C5. Morale in this clinical area is high
<b>4. Stress recognition</b>
D1. When my workload becomes excessive, my performance is impaired
D2. I am less effective at work when fatigued
D3. I am more likely to make errors in tense or hostile situations
D4. Fatigue impairs my performance during emergencies
<b>5. Perceptions of management</b>
E1. Managers support my daily efforts
E2. Managers do not knowingly compromise patient safety
E3. I get adequate, timely information about events that might affect my work
E4. The levels of staffing in this clinical area are sufficient to handle the number of patients
<b>6. Working Conditions</b>
F1. Problem personnel are dealt with constructively
F2. This hospital does a good job of training new personnel
F3. All the necessary information for diagnostic and therapeutic decisions is routinely available to me
F4. Trainees in my discipline are adequately supervised

Source: Huang *et al.*<sup>[18]</sup>

### **“Analysis methods”**

A one-way analysis of variance (ANOVA) was done at 0.05 to examine if age, employment education, and experience affected impressions. Posthoc Bonferroni analysis was done if the p-value was less than 0.05. In many pairwise comparisons, the Bonferroni method controls familywise error. AMOS 26.0 was used for

Confirmatory Factor Analysis (CFA) to verify component structure. CFA mainly aimed to confirm hypothesized correlations between observed elements also underlying components. Perkins *et al.*<sup>[19]</sup> observed that “Exploratory Factor Analysis (EFA)” was not employed because the component questions had already been generated. Using convergent validity, Gerbing *et al.*<sup>[20]</sup> validated patient

safety culture's dimensions. This test examined if each dimension's indicators measure the same construct. [21] Convergent validity in patient safety culture refers to how distinct items or metrics within a dimension correlate and imply a consistent measurement. Cohen *et al.*[22] used Pearson's correlation analysis to assess the six safety indicators' correlations. This analysis shows how patient safety culture metrics are related and how they work together. This study determines indicator linkages. It determines indicator relationships and patient safety culture measurement. According to Singer *et al.*[23], linear regression with forward selection was used to identify medical staff beliefs or views that most affect patient safety culture, particularly safety climate. This method allows for the incremental addition of variables into the regression model based on statistical significance, identifying key aspects that affect healthcare safety. This statistical method identifies the most significant determinants of safety climate variation. This regression analysis aids in identifying the most important predictors among the many medical staff opinions on patient safety culture.

## RESULTS

### Sample characteristics

The dataset's demographic information revealed that most of the respondents (37.7%) were from the Chengdu

Hospital of TCM and had a bachelor's degree (54.2%). Nearly 72% of respondents had worked at the institution for over five years. This suggests that many participants had long-term hospital experience, which shaped their views on patient safety culture. Furthermore, 39% of those polled had worked at the hospital for over 11 years. Internal medicine (39%) and surgery (34.7%) employees were from the administrative, medical technology, and pharmacy departments. Nurses (40.6%) were the most common respondents, followed by physicians (34.3%) (Table 2).

Table 3 shows that job satisfaction had the highest significant average value (4.09), showing respondents were satisfied with their jobs. Stress recognition averaged 3.62, the lowest of all dimensions. Respondents were less conscious of job performance-related stress. It suggests that participants may have felt less stress or understood less about their work performance in the patient safety culture. "Five patient safety culture" characteristics, "teamwork environment, safety climate, management viewpoints, working conditions, and cooperation climate" had average values over four. Respondents were optimistic about these patient safety culture features. The higher average scores indicate that participants perceived good cooperation, safety, management viewpoints, working circumstances, and collaboration in their healthcare setting.

**Table2 Demographic information of the respondents**

Characteristic	Frequency(n)	Percentage (%)
<b>Hospitals</b>		
Chengdu hospital of TCM	174	37.7
Shuanliu Hospital of TCM	94	20.4
Ziyang hospital of TCM	193	41.9
<b>Working experience</b>		
1-2 years	57	12.4
3-4 years	67	14.5
5-10 years	155	33.6
11-20 years	90	19.5
21 years or more	92	20
<b>Education</b>		
College	136	29.5
Bachelor	250	54.2
Master	55	11.9
Doctor or above	20	4.3
<b>Professional</b>		
Internal medicine	180	39
Surgery	160	34.7
Medical Technology	51	11.1
Pharmacy department	9	2
Administration department	61	13.2
<b>Position</b>		
Physician	158	34.3
Nurse	187	40.6
Administration	45	9.8
Administration manager	8	1.7
Head nurse	19	4.1
Perception of management	39	8.5
High hospital managers	5	1.1
Total	461	100

**ANOVA analysis**

**Table 3 Average Values and SD of the CSAQ dimensions**

Dimensions	Mean	SD
Stress recognition	3.62	0.992
Safety climate	3.95	0.512
Perception of management	3.98	0.55
Working condition	4	0.556
Team climate	4.03	0.489
Job satisfaction	4.09	0.594

ANOVA showed that employment position and hospital work experience did not affect the six CSAQ components. Education and working departments

were critical demographic components that influenced stress recognition, management attitudes, and safety climates (Tables 4 and 5). Education and different departments substantially impact stress recognition, management views, and safety climate. Medical staff with diplomas are more satisfied with the team climate, job satisfaction, management perceptions, and safety climate. Otherwise, hospital staff with a doctor or a higher degree have much more stress recognition than those with other degrees.

The internal medicine department scores lowest on team working climate and job satisfaction, same for the pharmacy department. However, internal medicine has more stress recognition than other departments do.

**Table 4. ANOVA results for education in six dimensions of CSAQ**

Dimensions	F	Sig	Bonferroni
Stress recognition	16.219	0.000	Doctors or above is the highest.
Safety climate	8.796	0.000	Diploma>Bachelor’s Degree or above
Perception of management	7.295	0.000	Diploma>Bachelor’s Degree or above
Working condition	14.311	0.000	Diploma>Bachelor’s Degree or above
Team climate	6.437	0.000	Diploma>Bachelor’s Degree or above
Job satisfaction	7.458	0.000	Diploma>Bachelor’s Degree or above

**Table 5. ANOVA results for departments in six dimensions of CASQ**

Dimensions	F	Sig	Bonferroni
Stress recognition	6.242	0.000	Internal medicine>other departments
Safety climate	4.637	0.001	Internal Medicine and surgery department>Administration Department and Medical Technology Department
Perception of management	3.565	0.007	Internal medicine<other departments except for pharmacy department
Working condition	4.797	0.001	Internal medicine and surgery department<administration department and Medical Technology Department
Team climate	6.857	0.000	Internal medicine<other departments except for pharmacy department
Job satisfaction	6.081	0.000	Internal medicine<other departments except for pharmacy department

**“The results of CFA”**

Estimating the factor loadings of the indicators was part of the model re-specification procedure. Factor loadings below 0.70 were poor.<sup>[24,25]</sup> Due to increasing measurement error and weak factor loadings, four items (tc2 and sc5) were eliminated from the original measurement. After this adjustment, 28 items were selected for further study and measured across six patient safety culture dimensions. Table 6 shows that the measurement model fit indices were within thresholds. According to Hair Jr *et al.*<sup>[25]</sup> and Fornell *et al.*<sup>[26]</sup>, the model fit well. Several fit indices met Hu *et al.*’s<sup>[27]</sup> requirements. The measurement model accurately reflected the data and fit the observed variables.

The measuring model fits multiple fit indices. GFI and RMSEA met their requirements for absolute fit indices. The measurement model’s goodness-of-fit was assessed using different fit indices. Three incremental fit indices, CFI, NFI, also TLI, strongly matched the measurement

model also observed variables. These fit indices show that the measurement model accurately describes observed variable relationships. Two parsimonious fit indices, PNFI also PGFI, also fit the data well. These findings show that the measurement model is simple, and also accurately represents the observed variables.

Item reliability and validity were assessed after assessing the specification measurement model’s fit. Table 6 shows all Cronbach’s coefficients ranging from 0.734 (management perceptions) to 0.913 (stress recognition). These coefficients exceeded 0.70 thresholds. The items had strong internal consistency and dependability, ensuring that they measured the intended constructs consistently and accurately. The Confirmatory Factor Analysis (CFA) showed that item composite reliability exceeded 0.70. The things were internally consistent and reliable. The average variance exceeds 0.50, indicating strong convergent validity. These results confirm the measurement model’s reliability and validity by meeting Hair Jr *et al.*<sup>[25]</sup> requirements.



**Table 6: Measurement model results for six dimensions of the CSAQ**

Dimension	Cronbach's $\alpha$	CR	AVE	Items
Teamwork climate	0.802	0.8145	0.472	5
Safety climate	0.831	0.8761	0.5137	6
Job satisfaction	0.9	0.787	0.5541	5
Stress recognition	0.913	0.9131	0.7253	4
Perceptions of management	0.734	0.757	0.4446	4
Working conditions	0.81	0.8227	0.5376	4

Note: Fit statistics  $\chi^2$ -value of 925.282 (df=390, p=0.000),  $\chi^2/df$ =2.373, GFI=0.881, CFI=0.931, NFI=0.887, TLI=0.923, RMSEA=0.055, PNFI=0.795 and PGFI=0.739

### “Pearson's correlation analysis”

“Pearson's correlation analysis” found that various parameters are positively correlated with safety climate. Correlation coefficients (r) show link strength and direction. The analysis showed a substantial positive association between safety climate and working conditions (r = 0.859, p < 0.001), suggesting that safety climate improves with working conditions. The safety atmosphere was positively correlated with management perception, job satisfaction, and teamwork climate. These data suggest that management perspective, job happiness, and teamwork climate promote safety

climate perception. All correlations have p-values below 0.001, indicating a strong relationship between these variables. The results show how these factors affect patient safety culture in healthcare organisations. Significant connections existed between job satisfaction, working conditions (r=0.811, P0.001), and management perception (r=0.802, P0.001). Meanwhile, teamwork climate was connected to verbal conditions (r=0.836, P0.001), management impression (r=0.799, P0.001), teamwork, and also job satisfaction (r=0.770, P0.001). Table 6 shows that stress recognition does not affect patient safety culture.

**Table 7: Pearson's correlation analysis of the CSAQ dimensions (n=456)**

	WC	MP	SR	JS	TC	SC
WC	0.5376					
PM	0.023***	0.4446				
SR	0.025***	0.025	0.7253			
JS	0.023***	0.028***	0.033***	0.5541***		
TC	0.018***	0.021***	0.023***	0.023***	0.472***	
SC						0.5137
AVE SQUE	0.733	0.667	0.852	0.744	0.687	0.717

Note: p-value<0.05; \*\* p-value<0.01; \*\*\*p-value<0.001; TC: teamwork climate; JS: job satisfaction; SR: stress recognition; PM: perceptions of management; WC: working conditions; SC: safety climate

### “Regression analysis”

The researchers evaluated the association between the five components of the CSAQ (Crew Safety Assessment Questionnaire) and the safety climate in the study.<sup>[28]</sup> They used a forward selection strategy to conduct a regression analysis to determine the precise factors affecting safety climate. This analysis included variables to the linear regression model if the F-statistic was less than 0.05, indicating a significant link. This method helps discover the factors that affect the safe atmosphere and improve patient safety in healthcare. The regression studies handled working conditions, teamwork climate, and job satisfaction as independent variables. The results are provided in Table 8, with the updated r-squared values for models 1–3 being 0.516, 0.626, and 0.642, respectively. Model 3, with the greatest corrected R-squared value, were selected. The adjusted R-squared values show the proportion of variance in safety climate that is explained by the

model's independent variables. Model 3, despite its greater complexity as compared to Models 1 and 2, accounts for the greatest amount of safety climatic fluctuation in this context. The updated R-squared value of 0.642 indicates that the combined impacts of the independent variables included in Model 3 can explain approximately 64.2% of the variability in safety climate. Working circumstances, cooperation, and job satisfaction significantly affect the safety atmosphere. With a standardized coefficient of 0.384, team climate positively impacted safety climate the most. Team climate changes may increase safety climate. Working conditions had a standardized coefficient of 0.317, suggesting that improving working conditions can improve safety. Job satisfaction showed a 0.196 standardized coefficient and thus has a positive effect. This demonstrates that team climate, improved working circumstances, and job satisfaction collectively contribute to creating a happy and safe workplace.

**Table 8 Coefficients of three models using five dimensions of the CSAQ**

Model		Unstandardized coefficients		standardized coefficients	t	sig
		B	Standard Error	Beta		
1	(Constant)	1.383	0.12		11.512	0.000
	Working Conditions	0.659	0.03	0.719	22.179	0.000
2	(Constant)	0.709	0.12		5.883	0.000
	Working Conditions	0.371	0.036	0.404	10.291	0.000
3	Team climate	0.453	0.039	0.458	11.652	0.000
	(Constant)	0.635	0.119		5.334	0.000
	Working Conditions	0.29	0.039	0.317	7.389	0.000
	Team climate	0.38	0.041	0.384	9.236	0.000
	Job satisfaction	0.034	0.007	0.196	4.62	0.000

Note: Dependent variable: safety climate; independent variable: teamwork climate, job satisfaction, stress recognition, perception of management, and working condition

## DISCUSSION

The CSAQ (Crew Safety Assessment Questionnaire) accurately assessed the patient safety views of Chinese medical workers. The CSAQ produced reliable and consistent results. The questionnaire also accurately measured patient safety perceptions, proving its concept capture validity. This study showed that the CSAQ could assess Chinese medical workers' patient safety views. The researchers recalculated the 28 CSAQ items to measure six safety-related variables.

Medical care quality is assurance crucial aspect of patient safety. Maintaining medical security and improving a safe climate, we can lay a solid foundation for preventing and minimizing medical distress. According to this study, as safety culture became more important, physician working conditions and the opportunity for lucrative physician-patient relationships can be improved. The survey also revealed that medical professionals need more safety expertise, as the medical system is flawed, and management practices are poor. Therefore, the following enhancements are proposed in this study.

### Improvement of team climate

This study demonstrated that a culture of teamwork fosters favorable attitudes toward a safe atmosphere. Improved collaboration among medical experts leads to higher patient safety. Buljac-Samardzic *et al.*<sup>[29]</sup> also found that team members' happiness, work satisfaction, and patient safety culture are associated with each other. Hang *et al.*<sup>[30]</sup> also Kristensen *et al.*<sup>[31]</sup> found comparable results. Abdel-Latif<sup>[32]</sup> independently discovered that medical staff cooperation and communication greatly impact patient safety measures such as morbidity, mortality, and medication errors. These findings confirm that medical staff teamwork and communication are crucial to patient safety. This study supports earlier findings that job satisfaction, teamwork, and good communication promote a positive patient safety culture, and also reduce adverse events in healthcare settings. Hospital administrators should prioritize patient safety awareness and encourage cross-departmental teamwork to improve safety. Similarly, systematic and informal team communication is essential

among medical workers to address patient safety concerns.

### Improvement of working conditions

The author discovered that better working conditions for medical workers contribute to a safer patient atmosphere. Li *et al.*<sup>[4]</sup> found that working conditions affect healthcare safety. Weinberg *et al.*<sup>[33]</sup> found that stress, multitasking, and staff shortages induce medical personnel distress. These include increased absenteeism, prescription mistakes, patient falls, and physician-patient strain. To reduce these negative effects and improve patient safety and treatment quality, healthcare workers need good working circumstances. Systematic staff training, professional supervision, and accurate diagnostic patient reporting are essential for good working conditions and patient safety. Music therapy, outdoor hobbies, and social clubs can help medical workers manage work-related stress. These strategies improve workers well-being and patient safety. Furthermore, for the formation of harmonious working conditions, proper resource allocation using cloud computing is required.<sup>[34]</sup>

### Improvement of job satisfaction

This study shows that job happiness is critical in creating a safe environment. The working conditions for medical professionals have become more passive and tense in recent years, mainly due to severe medical obligations, challenging patient relationships, increased medical arguments, and a progressive loss of work autonomy. As a result, physician satisfaction has decreased. On the other hand, a decline in job satisfaction might impair medical personnel's performance, resulting in dissatisfied patients and making the interaction between physicians and patients even more strained and unfavourable to society's advancement. This study found that physicians with more education have more positive attitudes towards management and the working environment, which correlates with job satisfaction. On the other hand, medical staff with diplomas reported the highest levels of job satisfaction. The survey also discovered that hospital personnel in internal medicine areas, such as the ICU, were less satisfied with their jobs than surgeons.

### **Suggestion for improvement of patient climate**

This study offers the following suggestions:

According to previous research, the structure of welfare, assessment, and reward systems considerably affects turnover intention.<sup>[35]</sup> Therefore, enhancing physicians' sense of belonging in their departments is vital.

Furthermore, physicians are typically stressed due to their demanding obligations, promotions, and job titles. On the other hand, a positive internal culture might ease this stress, allowing individuals to make effective psychological adjustments. First and foremost, an excellent medical personnel must fulfil a traditional function. Management must be accountable, assist medical and nursing employees, and prioritize medical staff's mental health. Furthermore, healthcare providers should help one another to reduce stress through regular interaction and overcome medical obstacles.

Finally, a scientific performance evaluation program was developed. Doctors are in charge of diagnosing and treating patients and academics in China. Their promotion and pay are linked to clinical work, scientific research, and teaching. Moreover, medical employees are responsible for going to the countryside to help eliminate poverty within six months to one year.

### **“Limitations and future research directions”**

There are certain limitations of this study. As a First limitation, the study population was restricted to A-level tertiary “Traditional Chinese Medicine (TCM)” facilities in Sichuan, China. The findings reported here can only be applied to specific hospitals and cannot be generalized to all healthcare organizations in China. Secondly, this study has no relation with the gender, and therefore, cannot understand how gender influences patient safety climate. The sex demographics may be considered in future studies.

## **CONCLUSION**

In conclusion, hospital managers should strive to create a patient safety culture that effectively reduces medical errors, lowers costs, and ensures the safety of patient. This study has ramifications for hospital executives who ensure high-quality healthcare delivery. The study emphasizes physician-patient connections and patient safety culture within healthcare organizations. These findings can provide valuable guidance to hospital management in improving physician-patient relationships.

This study demonstrates that physicians and nurses agree that a safety climate promotes patient safety. The study suggests that doctor-nurse teamwork can enhance patient safety as crucial component of patient-centred care. Patient safety will be prioritized and integrated into care delivery if healthcare professionals collaborate and communicate better. This collaborative approach leads to better coordination, information sharing, and teamwork, all of which are necessary for safe and successful healthcare. According to the study, working conditions and job satisfaction significantly

influence the patient safety culture, particularly within a safe environment. This shows that improving working conditions and job satisfaction for healthcare professionals can help to create a safety-focused culture. Staffing, workloads, leadership, and professional development are the key factors that can enhance working conditions. Addressing these key factors can help hospital administrators in creating patient-focused, high-quality care environments.

## **ACKNOWLEDGMENT**

### **Data Availability Statement**

The raw data supporting the conclusions of this article will be made available by the authors without any undue reservation.

### **Ethics Statement**

- (1) The ethics committee of the Hospital of Chengdu University of TCM approved this study.
- (2) Declaration of Helsinki

Subjects to be tested required sober consent. The test taker must have a general understanding of the experiment. The purpose of this experiment is to identify future methods. Laboratory or animal tests were performed prior to the test. Since it is to seek a method for the future, if the experiment damages the body and the mind of the human body, the investigation must be stopped immediately.

Compensation measures for test failure must first be formulated, and qualified persons can then experiment under the supervision of legal authorities.

### **All test responders provided informed consent**

- Availability of data and materials
- The data supporting the findings of this study are available from the corresponding author upon reasonable request.
- Consent for Publication
- This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.
- Interest Conflict

The authors declare no potential conflicts of interest with respect to the research, authorship and /or publication of this article.

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