



## RESEARCH ARTICLE

## Work Climate and Patient Safety Culture: A Comparative Study in Two Peruvian Hospitals

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Work climate and safety culture play a crucial role in healthcare, influencing the quality of care and user satisfaction. To determine the relationship between work climate and patient safety culture among nurses in two Peruvian hospitals. A correlational, cross-sectional study was conducted with 278 nurses from two hospitals in Lima: Hospital 1 and Hospital 2. Two questionnaires were applied: the CL-SPC for Work Climate by Palma Carrillo and the AHRQ Patient Safety Culture Survey, adapted to Spanish, both with proven reliability. In both hospitals, the work climate was perceived as moderately favorable (31.3% and 18%, respectively). The dimensions of self-realization (24.1% and 16.2%), job involvement (26.6% and 21.2%), communication (26.3% and 16.9%), and working conditions (32.0% and 18.0%) reflected similar trends. The supervision dimension was the only one rated as favorable, with scores of 20.9% and 18.7%, respectively. Among nurses perceiving a moderately favorable work climate, 34.7% and 32.4% in the two hospitals considered the patient safety culture acceptable. The outcomes dimension was rated as very good by 23.4% and 22.5%, respectively, while the unit/service and hospital-level culture was deemed acceptable (35.9% and 31.5%, and 33.5% and 27.9%, respectively). A significant correlation was confirmed between work climate and patient safety culture, with coefficients of .497\*\* and .662\*\* ( $p < 0.05$ ), indicating a statistically significant association between these factors among nurses.

**INTRODUCTION**

The management of healthcare delivery schemes is becoming increasingly complex, and establishing a patient safety culture has a significant influence on health outcomes. (1) A favorable work environment is essential to foster the professional performance of nurses, generating a positive impact on their personal well-being, the quality of care provided to patients, and the operational and economic efficiency of healthcare organizations. (2)

Patient safety incidents have become a major global challenge. In 2020, the World Health Organization (WHO) (3) reported 134 million cases of adverse effects in hospitals annually, resulting in 2.6 million deaths due to unsafe treatments.

Despite efforts by healthcare networks to encourage employees to communicate openly, reluctance among staff remains a common factor contributing to communication failures, leading to inadequate care and errors. Nurses' unwillingness to openly express their concerns is a significant issue that hinders effective and safe care. (4)

In Spain, a detailed analysis of safety culture in healthcare settings identified that actions focusing on communication, evaluation and recording of adverse incidents, staffing assignments, active

participation of hospital management, and the development of training programs for patient safety specialists could strengthen the safety environment. (5) In Poland, (6) studies highlight that working conditions influence the staff's commitment to user safety.

As Rainer and Schneider (7) pointed out, work climate and organizational culture are strong predictors of nurses' willingness to voice concerns. A hospital with a favorable safety environment will foster a culture where issues related to patient protection are more frequently discussed. Achieving this requires careful planning and routine evaluations at the team, unit, and hospital levels. (8)

In Peru, a study showed that 80% of safety incidents in hospitals resulted in harm (adverse and sentinel events), while 20% did not. (9) Safeguarding patients is a key priority for healthcare professionals and system managers, ensuring reliable and trustworthy care.

## **MATERIALS AND METHODS**

### **Type and Design of the Study**

This research is quantitative, correlational, and cross-sectional in design.

### **Population**

The population and sample were identical, employing a non-probabilistic, census-type sampling technique consisting of 278 nurses working in the care area.

### **Inclusion Criteria**

Nurses working in one of the hospitals, with at least one year of experience, who voluntarily decided to participate in the study and provided written consent.

### **Techniques and Instruments**

Two measurement tools were used in this study. The first was the CL-SPC scale developed by Palma Carrillo Sonia, as cited by Benites L. (10). This instrument comprises 50 items grouped into five dimensions: Personal Fulfillment, Job Involvement, Supervision, Communication, and Working Conditions. Diagnostic categories are classified based on total scores: Very Favorable (210–250), Favorable (170–209), Moderate (130–169), Unfavorable (90–129), and Very Unfavorable (50–89). The instrument's accuracy and consistency, analyzed using significant correlations at the 0.005 level and the Cronbach's Alpha and Guttman Split-Half methods, yielded results of .97 and .90, respectively.

To evaluate Patient Safety Culture, the study employed the Hospital Survey on Patient Safety Culture developed by the Agency for Healthcare Research and Quality (AHRQ, Spanish version, 2005), as cited by Cuadros-Carlesi et al. (11). This tool was designed to measure key aspects of patient safety. It includes 62 questions organized into four sections: frequency of reported events, perceptions of safety, expectations and actions of management or supervisors within the unit/service to promote safety, institutional learning and continuous improvement, teamwork within the unit/service, openness in communication, feedback and discussions about errors, a non-punitive response to mistakes, adequate staff availability, administrative support for patient safety issues, teamwork across units, and challenges during shift handovers and service/unit transitions.

The items are assessed using two five-point Likert scales. The first scale options are: 1 = "strongly disagree," 2 = "disagree," 3 = "neutral," 4 = "agree," and 5 = "strongly agree." The second scale options are: 1 = "never," 2 = "rarely," 3 = "sometimes," 4 = "almost always," and 5 = "always." Content and construct validation was performed using exploratory and confirmatory factor analysis with values  $\geq 0.90$ . Internal consistency was evaluated using the Cronbach's alpha coefficient, ranging from 0.63 to 0.84.

## Data Analysis

Records were transferred to a digital file, and variables were coded for analysis. Descriptive analyses and inferential statistics were conducted using SPSS version 25. For bivariate evaluation, Pearson's correlation coefficient  $r$  was used.

## RESULTS

In this research study, both the perception of work climate and the patient safety culture were assessed in two Peruvian hospitals to identify potential differences and correlations between these two study variables. Table 1 provides a detailed presentation of the sociodemographic aspects of the study population.

**Table 1: Sociodemographic Aspects of Nurses in Two Peruvian Hospitals**

Variable	Categoría	N	%
Centro Hospitalario	Hospital 1	167	60,1%
	Hospital 2	111	39,9%
	Total	278	100,0%
Edad	25 a 35 años	63	22,7%
	36 a 45 años	109	39,2%
	46 a 55 años	75	27,0%
	Mayores de 56 años	31	11,2%
	Total	278	100,0%
Condición laboral	Contratado	97	34,9%
	Nombrado	181	65,1%
	Total	278	100,0%
Tiempo que desempeña su profesión	26 años a más	28	10,1%
	21 a 25 años	30	10,8%
	16 a 20 años	53	19,1%
	11 a 15 años	65	23,4%
	6 a 10 años	69	24,8%
	Menor a 5 años	33	11,9%
	Total	278	100,0%
Tiempo de servicio en el hospital	26 años a más	38	13,7%
	21 a 25 años	33	11,9%
	16 a 20 años	38	13,7%
	11 a 15 años	61	21,9%
	6 a 10 años	59	21,2%
	Menor a 5 años	49	17,6%
	Total	278	100,0%

Table 1 presents the sociodemographic data of 278 nurses from two Peruvian hospitals, showing that the majority, 60.1%, work at Hospital 1. The predominant age group is between 36 and 45 years (39.2%), and most hold permanent positions (65.1%). Regarding experience, 24.8% have worked in their field for more than six years. Additionally, most nurses have long tenure at the hospital, with 21.9% having over 11 years of service.

**Table 2: Work Climate Among Nurses in Two Peruvian Hospitals**

		Centro Hospitalario					
		Hospital 1		Hospital 2		Total	
		N	%	N	%	N	%
Clima laboral	Muy Desfavorable	3	1.10%	1	0.40%	4	1.40%
	Desfavorable	29	10.40%	20	7.20%	49	17.60%
	Media	87	31.30%	50	18.00%	137	49.30%
	Favorable	45	16.20%	36	12.90%	81	29.10%
	Muy Favorable	3	1.10%	4	1.40%	7	2.50%
	Total	167	60.10%	111	39.90%	278	100%
Autorrealización	Muy Desfavorable	10	3.60%	5	1.80%	15	5.40%
	Desfavorable	59	21.20%	35	12.60%	94	33.80%
	Media	67	24.10%	45	16.20%	112	40.30%
	Favorable	25	9.00%	22	7.90%	47	16.90%
	Muy Favorable	6	2.20%	4	1.40%	10	3.60%
	Total	167	60.10%	111	39.90%	278	100%
Involucramiento laboral	Muy Desfavorable	1	0.40%	1	0.40%	2	0.70%
	Desfavorable	16	5.80%	6	2.20%	22	7.90%
	Media	59	21.20%	33	11.90%	92	33.10%
	Favorable	74	26.60%	59	21.20%	133	47.80%
	Muy Favorable	17	6.10%	12	4.30%	29	10.40%
	Total	167	60.10%	111	39.90%	278	100%
Supervisión	Muy Desfavorable	4	1.40%	1	0.40%	5	1.80%
	Desfavorable	34	12.20%	12	4.30%	46	16.50%
	Media	57	20.50%	39	14.00%	96	34.50%
	Favorable	58	20.90%	52	18.70%	110	39.60%
	Muy Favorable	14	5.00%	7	2.50%	21	7.60%
	Total	167	60.10%	111	39.90%	278	100%
Comunicación	Muy Desfavorable	6	2.20%	4	1.40%	10	3.60%
	Desfavorable	44	15.80%	19	6.80%	63	22.70%
	Media	73	26.30%	47	16.90%	120	43.20%
	Favorable	38	13.70%	37	13.30%	75	27.00%
	Muy Favorable	6	2.20%	4	1.40%	10	3.60%
	Total	167	60.10%	111	39.90%	278	100%
Condiciones laborales	Muy Desfavorable	5	1.80%	0	0.00%	5	1.80%
	Desfavorable	30	10.80%	17	6.10%	47	16.90%
	Media	89	32.00%	50	18.00%	139	50.00%
	Favorable	40	14.40%	40	14.40%	80	28.80%
	Muy Favorable	3	1.10%	4	1.40%	7	2.50%
	Total	167	60.10%	111	39.90%	278	100%

Table 2 shows that the perception of the work climate among nurses in two Peruvian hospitals generally ranges between the Favorable (29.1%) and Moderate (49.3%) categories. At Hospital 2, the dimension of Self-Realization stands out positively, with 1.4% of responses categorized as Very Favorable and 7.9% as Favorable. Supervision is also rated highly, with 18.7% of responses falling

under the Favorable category in the same hospital. However, Working Conditions are less positively evaluated, with only 14.4% of responses categorized as Favorable across both hospitals. Communication, although varied, tends toward positive evaluations, with 1.4% of responses rated as Very Favorable in Hospital 2. Differences between the hospitals highlight variability in internal policies or organizational cultures, indicating specific areas for improvement.

**Table 3: Patient Safety Culture Among Nurses in Two Peruvian Hospitals**

		Centro Hospitalario					
		Hospital 1		Hospital 2		Total	
		N	%	N	%	N	%
Cultura de seguridad del paciente	Deficiente	0	0.00%	0	0.00%	0	0.00%
	Pobre	2	0.70%	2	0.70%	4	1.40%
	Aceptable	102	36.70%	66	23.70%	168	60.40%
	Muy bueno	63	22.70%	43	15.50%	106	38.10%
	Excelente	0	0.00%	0	0.00%	0	0.00%
	Total	167	60.10%	111	39.90%	278	100.00%
Resultados	Deficiente	0	0.00%	0	0.00%	0	0.00%
	Pobre	6	2.20%	5	1.80%	11	4.00%
	Aceptable	61	21.90%	37	13.30%	98	35.30%
	Muy bueno	84	30.20%	58	20.90%	142	51.10%
	Excelente	16	5.80%	11	4.00%	27	9.70%
	Total	167	60.10%	111	39.90%	278	100%
Nivel de unidad/servicio	Deficiente	0	0.00%	0	0.00%	0	0.00%
	Pobre	5	1.80%	2	0.70%	7	2.50%
	Aceptable	106	38.10%	63	22.70%	169	60.80%
	Muy bueno	55	19.80%	45	16.20%	100	36.00%
	Excelente	1	0.40%	1	0.40%	2	0.70%
	Total	167	60.10%	111	39.90%	278	100%
Nivel de todo el hospital	Deficiente	0	0.00%	1	0.40%	1	0.40%
	Pobre	27	9.70%	37	13.30%	64	23.00%
	Aceptable	102	36.70%	68	24.50%	170	61.20%
	Muy bueno	38	13.70%	5	1.80%	43	15.50%
	Excelente	0	0.00%	0	0.00%	0	0.00%
	Total	167	60.10%	111	39.90%	278	100%

Table 3 illustrates the perception of patient safety culture and related aspects in two Peruvian hospitals. Most participants rated it as "Acceptable," with 36.7% in Hospital 1 and 23.7% in Hospital 2. Regarding outcomes, Hospital 1 recorded 30.2% of responses as "Very Good," compared to 20.9% in Hospital 2. At the unit/service level, only 0.4% in both hospitals rated it as "Excellent." At the hospital-wide level, perceptions were lower, with 9.7% in Hospital 1 and 13.3% in Hospital 2 rating it as "Poor." These results highlight significant areas for improvement in hospital management and supervision.

**Table 4: Work Climate and Patient Safety Culture Among Nurses in Two Peruvian Hospitals**

Clima laboral		Hospital 1										
		Cultura de seguridad del paciente										Total
		Deficiente		Pobre		Aceptable		Muy bueno		Excelente		
N	%	N	%	N	%	N	%	N	%	N	%	
Muy Desfavorable	0	0.00%	0	0.00%	2	1.20%	1	0.60%	0	0.00%	3	1.80%
Desfavorable	0	0.00%	1	0.60%	24	14.40%	4	2.40%	0	0.00%	29	17.40%

Media	0	0.00%	1	0.60%	58	34.70%	28	16.80%	0	0.00%	87	52.10%
Favorable	0	0.00%	0	0.00%	17	10.20%	28	16.80%	0	0.00%	45	26.90%
Muy Favorable	0	0.00%	0	0.00%	1	0.60%	2	1.20%	0	0.00%	3	1.80%
Total	0	0.00%	2	1.20%	102	61.10%	63	37.70%	0	0.00%	167	100%
Hospital 2												
Clima laboral	Cultura de seguridad del paciente											
	Deficiente		Pobre		Aceptable		Muy bueno		Excelente		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Muy Desfavorable	0	0.00%	0	0.00%	1	0.90%	0	0.00%	0	0.00%	1	0.90%
Desfavorable	0	0.00%	2	1.80%	15	13.50%	3	2.70%	0	0.00%	20	18.00%
Media	0	0.00%	0	0.00%	36	32.40%	14	12.60%	0	0.00%	50	45.00%
Favorable	0	0.00%	0	0.00%	14	12.60%	22	19.80%	0	0.00%	36	32.40%
Muy Favorable	0	0.00%	0	0.00%	0	0.00%	4	3.60%	0	0.00%	4	3.60%
Total	0	0.00%	2	1.80%	66	59.50%	43	38.70%	0	0.00%	111	100%

Table 4 shows that in Hospital 1, most nurses who experienced a "Very Unfavorable" work climate rated the patient safety culture as "Acceptable" (1.2%), while those with an "Unfavorable" work climate also rated it as "Acceptable" (14.4%). Nurses who perceived the work climate as "Moderate" predominantly rated the patient safety culture as "Acceptable" (34.7%) and "Very Good" (16.8%). Among those who experienced a "Favorable" work climate, the ratings were primarily "Acceptable" (10.2%) and "Very Good" (16.8%). All nurses who reported a "Very Favorable" work climate rated the patient safety culture as "Acceptable" (0.6%).

In Hospital 2, a similar pattern emerged. Nurses with a "Very Unfavorable" work climate rated the patient safety culture as "Acceptable" (0.9%). Those with an "Unfavorable" work climate also rated it as "Acceptable" (13.5%). The majority of nurses who perceived the work climate as "Moderate" rated the patient safety culture as "Acceptable" (32.4%) and "Very Good" (12.6%). For those who experienced a "Favorable" work climate, the ratings were "Acceptable" (12.6%) and "Very Good" (19.8%). Finally, nurses who reported a "Very Favorable" work climate rated the patient safety culture as "Very Good" (3.6%).

**Table 5: Pearson's r Correlation Coefficient for Work Climate and Patient Safety Culture Variables**

Hospital 1			
		Clima laboral	Cultura de seguridad del paciente
Clima laboral	Correlación de Pearson	1	,497**
	Sig. (bilateral)		0
	N	167	167
Cultura de seguridad del paciente	Correlación de Pearson	,497**	1
	Sig. (bilateral)	0	
	N	167	167
**. La correlación es significativa en el nivel 0,01 (bilateral).			
Hospital 2			
		Clima laboral	Cultura de seguridad del paciente
Clima laboral	Correlación de Pearson	1	,662**
	Sig. (bilateral)		0
	N	111	111

Cultura de seguridad del paciente	Correlación de Pearson	,662**	1
	Sig. (bilateral)	0	
	N	111	111
**. La correlación es significativa en el nivel 0,01 (bilateral).			

In Hospital 1, a Pearson's r correlation coefficient of 0.497 was found, with a two-tailed significance (Sig.) of 0.000. This indicates a moderately positive significant correlation between the study variables. Similarly, in Hospital 2, the Pearson's r correlation coefficient was 0.662, with a two-tailed significance (Sig.) of 0.000, demonstrating a strongly positive significant correlation between the study variables.

## DISCUSSION

The analysis conducted with 278 nurses from two hospitals in Peru reveals that most participants are between 46 and 55 years old (37.2%), with 64.1% holding contracted positions. Regarding work experience, 19.1% have been in the field for over 21 years, and 21.2% have been employed in the hospital for more than 21 years.

In examining the relationship between work climate and patient safety culture, this study highlights the significance of work climate in influencing all aspects of an organization, particularly its relationship with a patient safety mindset. Risk-prone healthcare practices can increase preventable illnesses and deaths, escalate institutional costs, and raise serious concerns. Similar findings have been reported by Torres et al. (12) and Ramírez et al. (13), who identified significant relationships between these variables. These findings emphasize the importance of threat control strategies, incorporating preventive measures to minimize unintentional incidents during healthcare procedures, improving workplace conditions for staff, and enhancing care standards for patients.

Ojeda et al. (14) identified that organizational climate and seven of its dimensions are related to patient safety culture, though these variables were perceived as unhealthy and positive, respectively. Similarly, Vega R. and Podestá L. (15) reported correlations between organizational climate and safety culture, as well as among their dimensions, including organizational behavior, structure, and leadership style. These insights provide valuable guidance for strengthening competencies that optimize staff quality management by analyzing and understanding the internal and external factors inherent to organizational culture.

Regarding work climate and patient safety culture in terms of the dimension of reported events and safety perception, nurses described a moderately favorable work climate and a very good safety culture, with a maximum level of protection for patients in their service and up to five reported incidents annually. Ramírez et al. (13) identified a low perception of reported incidents but a high perception of patient-centered safety at the primary care level. These findings reinforce that organizational climate fosters integration of safety strategies, strengthens communication, supports educational programs, and minimizes risks, aligning with the goal of establishing safe standards for patient care.

Gamboa et al. (16) demonstrated that nurses perceive patient safety levels as adequate but highlighted the need to strengthen effective communication about incidents. They emphasized innovative recording technologies and comprehensive staff training for timely detection and accurate record-keeping. Transforming organizational culture by replacing punitive approaches with education-focused strategies and fostering constant growth requires attention from the institution's strategic management.

Unprofessional and inappropriate behavior poses threats to patient safety by increasing the risk of harm (17). Nurses with positive perceptions of safety culture are more likely to raise concerns about patient safety issues (18). Despite considerable progress, evidence shows that nurses often do not report errors (19). Fear of negative consequences, beliefs in a perceived "blame culture," lack of training in incident reporting, and the need for continuous oversight are contributing factors (20).

This study demonstrates that a positive work climate improves patient safety culture at the unit/service level. In particular, teamwork emerges as a protective factor, with findings corroborating studies in Brazil (21) and Mexico (22, 23). In these studies, teamwork was perceived positively and as the only strength ensuring reduced risks in patient care. However, other dimensions of patient safety culture lacked significant strengths but provided opportunities for improvement. Unlike the present study, this evidence highlights the need for enhanced organizational leadership and systematic error-prevention measures.

## **CONCLUSION**

### **Work Climate**

In both hospitals, nurses rated their work climate as "moderate," with the highest percentage of "favorable" responses in Hospital 1 and the lowest percentage of "very favorable" responses in Hospital 2. This suggests room for improvement, particularly in the domains of self-actualization and supervision. Working conditions were the most unfavorable factor in both hospitals, reflecting issues such as workload, equipment, and the physical environment requiring attention.

### **Perception of Patient Safety Culture**

Regarding patient safety culture, most nurses rated it as "acceptable," with a notable proportion of "very good" responses, especially in Hospital 1. However, a significant number of nurses in both hospitals rated the safety culture as "poor." These findings underscore the need to strengthen safety culture in both hospitals, particularly through integrating safe practices and effective communication.

### **Relationship Between Work Climate and Patient Safety Culture**

A moderately positive correlation was found in Hospital 1 ( $r = 0.497$ ,  $p < 0.001$ ), while a strong positive correlation was identified in Hospital 2 ( $r = 0.662$ ,  $p < 0.001$ ). These findings indicate that work climate significantly influences perceptions of patient safety culture. In both hospitals, nurses who perceived a more favorable work climate were more likely to rate patient safety culture positively.

### **Specific Areas for Improvement**

Work conditions and communication were identified as the least favorable areas in both hospitals. Addressing these issues requires the implementation of organizational policies aimed at improving these domains, enhancing supervision, fostering self-actualization, and optimizing internal communication among nursing staff.

### **Implications for Hospital Management**

Hospital management plays a crucial role in improving work climate and patient safety culture. Differences between hospitals in internal policies, organizational culture, and leadership approaches highlight the need for tailored programs and continuous improvement strategies. Engaging staff in decision-making processes related to patient safety is also essential.

### **Future Research**

Future studies should explore the root causes of unfavorable perceptions regarding working conditions and patient safety through qualitative methodologies. Longitudinal research should also investigate the evolution of work climate and safety culture, examining their impact on care quality and patient satisfaction.

## **CONTRIBUCIÓN DE AUTORÍA**

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