

Beyond Patient Safety: Exploring the Mechanism of How Organizational Support Influences Nurses' Safety Behavior in Pediatric Intensive Care Units

Wenjing Song¹, Ying Yang¹, Jingrong Fan², Yangfan Hu³

¹Nursing Department, Capital Center for Children's Health, Capital Medical University, Beijing, People's Republic of China; ²Intensive Care Unit (ICU), Capital Center for Children's Health, Capital Medical University, Beijing, People's Republic of China; ³Nursing Teaching and Research Department, Capital Center for Children's Health, Capital Medical University, Beijing, People's Republic of China

Correspondence: Ying Yang, Nursing Department, Capital Center for Children's Health, Capital Medical University, 2 Yabao Road, Chaoyang District, Beijing, 100020, People's Republic of China, Tel +86 15001385381, Email Yangying_yy9@163.com

Objective: To examine the relationships among safety culture perception, organizational support, and safety behavior in nurses working in the intensive care unit (ICU) of a pediatric hospital, as well as the underlying mechanisms.

Methods: We surveyed 133 ICU nurses using the Nurse Safety Behavior Scale, Nurse Culture Perception Questionnaire, and Organizational Support Questionnaire. Nurses completed questionnaires during designated breaks in their shifts. We analyzed responses using SPSS 22.0, calculated descriptive statistics, ran correlation analyses, and performed mediation analysis with bootstrapping. We set significance at $P \leq 0.05$.

Results: The mean scores for safety behavior, safety culture perception, and organizational support were 56.26 ± 4.61 , 103.92 ± 12.80 , and 50.11 ± 11.32 , respectively. Safety behavior was positively correlated with both safety culture perception ($r = 0.367$, $P \leq 0.01$) and organizational support ($r = 0.360$, $P \leq 0.01$). Mediation analysis revealed that safety culture perception partially mediated the effect of organizational support on safety behavior, explaining 30.47% of the total effect.

Conclusion: Safety culture perception acts as a mediator between organizational support and safety behavior in pediatric ICU nurses. Hospital administrators can foster a culture of safety, enhance organizational support, and promote safety practices among nurses to better ensure patient safety in pediatric critical care settings. These findings have important implications for developing targeted interventions to improve safety behaviors among pediatric ICU nurses.

Keywords: pediatric patient safety, safety behavior, safety culture, organizational support, pediatric intensive care units

Background

Patient safety is of paramount importance in intensive care units (ICUs), especially in pediatric hospitals. Pediatric ICUs provide care for critically ill children who are at high risk of adverse events.¹ National data from a comprehensive pediatric trigger tool study by Stockwell et al revealed a notably high rate of 40 harmful events per 100 patients admitted to pediatric hospitals and 54.9 harms per 1000 patient days.² Their multi-center study of six academic children's hospitals found that at least one harmful event occurred in 24.3% of pediatric inpatients, highlighting the significant safety challenges in these settings. Internationally, the Canadian Paediatric Adverse Events Study by Matlow et al found that adverse events affect 9.2% of hospitalized children, with significant differences between academic pediatric centers and community hospitals.³ Notably, surgical events predominated overall and were more common in academic pediatric centers than in community hospitals (37.2% vs 21.5%), while events associated with diagnostic errors showed the opposite pattern (11.1% vs 23.1%).

Pediatric patients are particularly vulnerable due to their constantly changing physiology, inability to communicate effectively, and dependence on parents and healthcare professionals. Children in ICUs have underdeveloped organ systems, weight-based medication dosing requirements, and often require specialized equipment, creating unique safety challenges not present in adult care. Due to these factors, promoting patient safety is crucial for care quality in pediatric ICUs.

Safety behavior, safety culture perception, and organizational support are three key factors that can significantly influence patient safety. According to Organizational Support Theory, organizational support refers to the extent to which an organization values employees' contributions and cares about their well-being.⁴ It encompasses perceived support for safety, recognition and reward for safe practices, availability of proper safety training, and adequacy of safety equipment and protocols.⁵ When nurses perceive greater organizational support for safety, they will believe the organization values and cares for their safety and welfare. This leads to a more positive safety culture perception, involving beliefs that safety is a priority and there are adequate measures to ensure protection. A strong, positive safety culture perception motivates individuals' adoption of safety behaviors by influencing attitudes and shaping work values.⁶

Safety behavior refers to the behaviors that can prevent errors or reduce harm, such as double-checking medications, hand washing, using personal protective equipment, asking questions when unsure, and following procedures precisely.^{7,8} These behaviors minimize the risks of adverse events for patients. Pediatric ICU nurses' safety behavior is particularly vital given their close and frequent contact with critically ill children and the high-risk nature of pediatric critical care. However, the mechanism of how safety culture perception shapes safety behavior in pediatric ICU nurses requires further investigation.

Although organizational support is positively associated with safety compliance,⁹ its relationship with safety behavior in pediatric ICU nurses remains unclear. Previous studies have identified gaps in understanding how organizational factors specifically influence safety practices in pediatric critical care environments. Kanter's Theory of Structural Power in Organizations proposes that access to support and resources (ie organizational support) empowers individuals to accomplish organizational goals (eg safe practice) through influencing attitudes and work behaviors.¹⁰ Investigating how organizational support impacts safety behavior through shaping safety culture perception in pediatric ICU nurses can validate this theoretical mechanism and address an important knowledge gap.

In summary, safety behavior, safety culture perception, and organizational support are interrelated but distinct concepts essential for patient safety. While associations have been established among them, the connections specifically in pediatric ICU nurses need to be examined. Investigating these relationships can provide a theoretical foundation for developing data-driven interventions to encourage a culture of safety and enhance safe practices within this group of healthcare professionals. This in turn helps minimize risks and improve care quality for vulnerable pediatric ICU patients.

Examining the connections among safety behavior, safety culture perception, and organizational support in pediatric ICU nurses can provide insights into approaches for facilitating patient safety practices. Elucidating the mechanism of how organizational support may influence safety behavior through safety culture perception is of particular importance. Findings from such research can inform interventions and policies for encouraging a safety culture and safe behaviors in this group of healthcare professionals to reduce risks in pediatric critical care.

The purpose of this study is to investigate the relationships among safety behavior, safety culture perception, and organizational support in pediatric ICU nurses. We hypothesize that 1) safety behavior is positively correlated with safety culture perception and organizational support; 2) safety culture perception mediates the effect of organizational support on safety behavior. The implications of this research include developing targeted interventions to improve safety culture and organizational support systems in pediatric ICUs, ultimately enhancing patient safety outcomes.

Aim

The aim of the study was to examine the effects of safety culture perception and organizational support on safety behavior in nurses working in a pediatric intensive care unit and determine the relationship between these three factors to provide a reference for the formulation of intervention measures by managers.

Method

Sample/Participants

This study adopted a cross-sectional survey design to examine the relationships among safety culture perception, organizational support, and safety behavior in nurses working in the ICU of a pediatric hospital. The study was conducted at a single site, and data were collected through self-administered questionnaires. This study follows the STROBE checklist for cross-sectional studies ([Supplementary Material](#)).

Inclusion criteria were: registered nurses holding a valid nursing license (defined as a license issued by the national nursing authority that is current and without restrictions) who provided informed consent and agreed to participate. There were no specific age or education level restrictions, although demographic information including age and education was collected. Exclusion criteria were: nurse managers; nurses engaged in further education or internship; and nurses unable to complete the questionnaire due to extended leave or other reasons.

Data Collection

Study instruments:

- ① A general information questionnaire collected data on age, title, personnel, highest degree attained, and marital status.
- ② The Nurse Safety Behavior Scale⁹ was adapted into Chinese by Liao et al. The scale includes 12 items with a 5-point Likert scale to assess nurses' safety behaviors. Scores range from 12 to 60 points, with higher scores indicating better safety behavior. The reliability of the scale was confirmed with a Cronbach's α coefficient of 0.953, indicating excellent internal consistency. The scale includes the following dimensions: adherence to protocols, personal protective equipment use, and risk reporting behavior.
- ③ The Nurse Safety Culture Perception Questionnaire¹⁰ was modified by Javadi et al. It includes 24 items measured on a 5-point Likert scale, assessing nurses' perceptions of safety culture in their organization. Scores range from 24 to 120 points, with higher scores indicating more positive safety culture perception. The questionnaire is divided into five dimensions: leadership support, safety training, communication, safety resources, and teamwork. The Cronbach's α coefficient of the questionnaire was 0.905, indicating good reliability.
- ④ The Organizational Support Questionnaire¹¹ was revised by Ma et al based on the Organizational Support Scale developed by Professor Chen Zhixia. The 13-item questionnaire assesses nurses' perception of organizational support for safety practices. Scores range from 13 to 65 points, with higher scores indicating greater perceived organizational support. It has two main dimensions: perceived safety-related support and general organizational support. The reliability of the scale was confirmed with a Cronbach's α of 0.914.

Data were collected through a cross-sectional survey of ICU nurses during all departmental shifts over a one-week period in September 2020. Self-administered questionnaires were distributed by the research team to all nurses who met inclusion criteria and provided written informed consent. Nurses were given time during designated break periods to complete the questionnaires to minimize interference with patient care duties and reduce the impact of fatigue and workload on responses. Questionnaires were retrieved by the research team immediately upon completion. Of the 140 eligible nurses, 133 completed the questionnaires, yielding a 95% response rate.

The entire study, from initial planning to completion of data analysis, was conducted from March 2020 to December 2020.

Ethical Considerations

This study was approved by the Medical Ethics Committee of Capital Institute of Pediatrics (approval number SHERLL2020048). All participants provided written informed consent before participating in the study. Participants were informed about the purpose of the study, its voluntary nature, and their right to withdraw at any time without consequences. Confidentiality and anonymity were maintained throughout the data collection and analysis process.

Data Analysis

Statistical analyses were performed using SPSS version 22.0. Descriptive statistics including means, standard deviations, and frequencies described the sample characteristics. Independent *t*-tests and one-way ANOVAs analyzed differences in scale scores between demographic groups (age groups, job titles, education levels, and marital status). Bivariate correlation analysis using Pearson’s *r* examined associations between variables. Hierarchical multiple linear regression modeled the effects of organizational support and safety culture perception on safety behavior. Mediation analysis following the method proposed by Zhonglin Wen tested the indirect effect of organizational support on safety behavior through safety culture perception using 5000 bootstrap resamples and 95% confidence intervals.¹² Statistical significance was set at $P < 0.05$.

Results

Demographic Characteristics of the Study Participants

The demographic characteristics of the study participants are presented in Table 1. Most participants (73.7%) were 30 years old or younger. A majority held the position of senior nurse (52.6%) and were contract employees (84.2%). Regarding education, 57.9% had a bachelor’s degree, while 37.6% had a college education. Nearly half of the participants (48.9%) were unmarried, and 37.6% were married with one child.

The Scores of the Nurse Safety Behavior Scale, the Nurse Safety Culture Perception Questionnaire, and the Organizational Support Questionnaire

The mean scores of the Nurse Safety Behavior Scale, the Nurse Safety Culture Perception Questionnaire, and the Organizational Support Questionnaire were 56.26 ± 4.61 , 103.92 ± 12.80 , and 50.11 ± 11.32 , respectively. These scores indicate that nurses generally reported positive safety behaviors, had favorable perceptions of safety culture, and felt supported by their organization. However, there is still room for improvement, particularly in organizational support.

Table 2 shows the current safety behavior status. The highest-scoring items were “I always clean my hands before contacting a patient” (4.88 ± 0.35) and “I actively verify the patient’s identity” (4.87 ± 0.36), indicating strong compliance with fundamental safety practices. The lowest-scoring items were “I pay attention to the safety behaviors of my colleagues” (4.26 ± 0.79) and “I pay attention to the safety behaviors of my superiors” (4.43 ± 0.77), suggesting potential areas for improvement in peer monitoring and leadership observation.

Correlation Analysis Between Safety Behavior, Safety Culture Perception, and Organizational Support Scores of the Study Participants

The safety behavior score shows positive correlations with the safety culture perception score ($r = 0.367$, $P \leq 0.01$) and organizational support score ($r = 0.360$, $P \leq 0.01$). Moreover, the organizational support and safety culture perception

Table 1 Basic Information of the Study Participants

Variable	n	Percentage	Variable	n	Percentage
Age			Highest educational level		
≤30	98	73.7	Vocational school	6	4.5
31–40	27	20.3	College	50	37.6
41–55	8	6.0	Bachelor’s degree	77	57.9
Job title			Marital and childbearing status		
Nurse	41	30.8	Unmarried	65	48.9
Senior nurse	70	52.6	Married without children	12	9.0
Supervisor nurse	22	16.5	Married with 1 child	50	37.6
Employment status			Married with 2 children	5	3.8
Contract employment	112	84.2	Divorced	1	0.8
Formally employed	21	15.8			

Table 2 Current Safety Behavior Status

Item	Score (Mean \pm SD)
I always clean my hands before contacting a patient.	4.88 \pm 0.35
I actively verify the patient's identity.	4.87 \pm 0.36
I learn from past incidents and lessons to prevent accidents.	4.82 \pm 0.42
I ask my superior when in doubt.	4.82 \pm 0.42
I strive to make the patient as safe as possible.	4.77 \pm 0.46
I follow the safety regulations of my unit.	4.73 \pm 0.50
I prioritize patient safety.	4.73 \pm 0.51
I aim to maintain zero incidents.	4.71 \pm 0.52
Before caring for a patient, I familiarize myself with the unit's standard operating procedures.	4.67 \pm 0.59
I try to adjust my mental and physical state to the most suitable condition.	4.56 \pm 0.80
I pay attention to the safety behaviors of my superiors.	4.43 \pm 0.77
I pay attention to the safety behaviors of my colleagues.	4.26 \pm 0.79

scores show a positive correlation ($r = 0.418$, $P \leq 0.01$). Table 3 displays the details of the correlation analysis. These correlations indicate that nurses who perceive stronger organizational support and a more positive safety culture tend to exhibit better safety behaviors. The positive correlation between organizational support and safety culture perception suggests that these two factors are interrelated but distinct constructs.

Mediating Effect Analysis of Safety Culture Perception

The sequential test method was used to examine mediating effect.¹²

Step 1: The effect of organizational support on safety behavior was significant ($b = 0.45$, $SE = 0.12$, $t = 3.75$, $p < 0.001$), indicating that organizational support significantly influenced safety culture perception.

Step 2: The effect of safety culture perception on safety behavior was significant ($b = 0.36$, $SE = 0.11$, $t = 3.27$, $p = 0.002$), suggesting that safety culture perception significantly predicted safety behavior.

Step 3: The total effect of organizational support on safety behavior was significant ($b = 0.24$, $SE = 0.08$, $t = 3.00$, $p = 0.003$), confirming that organizational support has a direct effect on safety behavior.

Additionally, the indirect effect (mediation effect) of organizational support on safety behavior through safety culture perception was significant ($p < 0.05$), with a bootstrap 95% confidence interval (CI) of [0.15, 0.32] based on 5,000 resamples. This confirms that safety culture perception mediates the relationship between organizational support and safety behavior. The mediation effect accounted for 30.47% of the total effect of organizational support on safety behavior. Details are shown in Tables 4 and 5. Figure 1 reveals the structural equation model.

These findings demonstrate that while organizational support directly influences safety behavior, a substantial portion of this influence occurs indirectly through its effect on safety culture perception. This highlights the importance of both improving organizational support and fostering a positive safety culture to enhance safety behaviors among pediatric ICU nurses.

Table 3 Correlation Analysis Between Nurse Safety Behavior, Safety Culture Perception, and Organizational Support Perception

Variable	Safety Behavior	Safety Culture Perception	Organizational Support Perception
Safety Behavior	1	0.367**	0.360**
Safety Culture Perception	—	1	0.418**
Organizational Support Perception	—	—	1

Notes: ** Correlation is significant at the 0.01 level (2-tailed).

Table 4 Mediation Effect Test of Nurse Safety Culture Perception, Organizational Support Perception, and Nurse Safety Behavior

Step	Dependent Variable	Independent Variable	R	F	t	p
1	Safety Behavior	Organizational Support Perception	0.13	19.52	4.42	0
2	Safety Culture Perception	Organizational Support Perception	0.175	27.81	5.27	0
3	Safety Behavior	Safety Culture Perception	0.186	14.89	3.01	0
	Organizational Support Perception			2.87	0	

Notes: Statistical test: Hierarchical multiple regression analysis.

Table 5 Total Effect, Direct Effect, and Mediation Effect Decomposition

Effect Type	Effect Value	Bootstrapping Standard Error	Bootstrapping Lower Limit	Bootstrapping Upper Limit	Effect Proportion
Total Effect	0.147	0.033	0.081	0.212	—
Direct Effect	0.102	0.036	0.032	0.172	69.53%
Indirect (Mediated) Effect	0.045	0.042	0.005	0.157	30.47%

Notes: Statistical test: Bootstrap mediation analysis with 5000 resamples.

Discussion

The results of this study underline the critical roles of organizational support and safety culture perception in shaping nurses' safety behavior in pediatric ICUs. Nurses who perceive greater organizational support tend to exhibit more proactive safety behaviors, such as adhering to safety protocols, using personal protective equipment, and reporting safety concerns. This indicates that when nurses feel supported by their organization, they are more likely to engage in behaviors that enhance patient safety. Additionally, our findings show that safety culture perception mediates the relationship between organizational support and safety behavior, highlighting the importance of fostering a positive safety culture within healthcare organizations.

The relationship between organizational support and safety behavior is consistent with existing literature, which suggests that organizational climate and culture play significant roles in influencing healthcare workers' safety behaviors. Previous studies in pediatric settings have also demonstrated that higher organizational support is associated with better adherence to safety protocols and fewer safety incidents in healthcare settings.^{13,14} For example, Singer et al found significant variations in patient safety climate perceptions across different hospital work areas and disciplines [C]. Their study of 92 US hospitals revealed that emergency department personnel perceived worse safety climate than other areas, while nurses were more negative than physicians regarding their work unit's support and recognition of safety efforts.¹⁵ However, what our study adds to the existing body of knowledge is the identification of safety culture perception as a key mediator in this relationship. While organizational support directly influences safety behavior, it also shapes how nurses perceive safety within their workplace, which in turn influences their actions. This finding aligns with the theoretical framework proposed by Kim SH, et al,¹⁶ which suggests that organizational support enhances individuals' ability to achieve safety-related goals by fostering a sense of psychological empowerment and belonging.

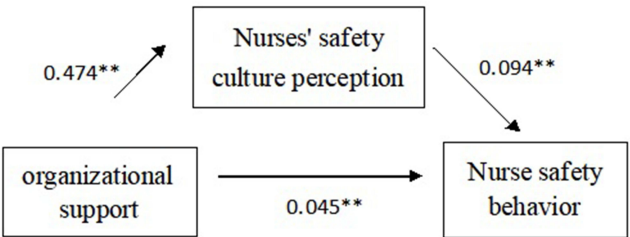


Figure 1 Path analysis between nurses' safety culture perception, organizational support and nurses' safety behavior ** p < 0.01.

Moreover, our results indicate that organizational support impacts safety behavior not only directly but also through its effect on safety culture perception. This indirect effect suggests that fostering a positive safety culture is crucial for improving safety behavior among nurses. The perception that safety is a priority within the organization encourages nurses to adopt safer practices, even in high-pressure environments such as the pediatric ICU. This finding is consistent with previous research by Liu Y, et al,¹⁷ who highlighted that a positive safety culture significantly predicts better safety outcomes in pediatric healthcare settings. However, our study extends this by demonstrating that safety culture perception mediates the relationship between organizational support and safety behavior, offering new insights into the mechanisms by which organizational support affects safety outcomes.

One of the key implications of our findings is that enhancing organizational support and fostering a strong safety culture are critical components for improving safety behavior in pediatric healthcare settings. Providing adequate resources, safety training, and leadership support are essential to ensuring that nurses feel empowered to prioritize safety. Additionally, organizations must invest in building a culture where safety is actively reinforced, both through leadership actions and organizational policies. This approach ensures that safety is not just a priority in theory but is embedded in the daily practices of nurses.

While our study supports the notion that organizational support and safety culture perception are crucial for enhancing safety behavior, it also underscores the complexity of the relationship between organizational factors and individual behaviors. Although our study found that organizational support and safety culture perception significantly influence safety behavior, there are other factors, such as individual attitudes and work environment characteristics, that may also contribute to safety compliance. For example, while nurses in our study reported high levels of safety knowledge and a positive safety culture perception, their actual safety compliance was moderate. This suggests that safety knowledge and attitudes alone are insufficient to drive consistent safe behavior. Organizational support for safety, coupled with a strong safety culture, can help bridge the gap between knowledge and action.

Another important finding from this study is the variability in safety behavior scores across participants. Despite a generally positive perception of safety culture, there was still considerable room for improvement in the safety behaviors of pediatric ICU nurses. This highlights the need for continued efforts to align organizational goals with individual safety behaviors. Improving safety behavior requires a multifaceted approach, including ongoing training, clear communication, and a supportive environment where safety concerns are addressed without fear of retribution. Moreover, fostering a culture where errors and risks are openly discussed and addressed is essential for enhancing safety practices. This aligns with the findings of Nguyen HT, et al,¹⁸ who emphasized the importance of creating an open and supportive environment for reporting safety concerns in pediatric care settings.

Limitations

The cross-sectional study design precludes establishing causal relationships. Future research should adopt longitudinal or experimental designs to further validate the study conclusions. While the results highlight important associations among the variables, causal inferences cannot be made due to the study design. Longitudinal studies tracking changes over time or experimental studies manipulating organizational support and safety culture can provide stronger evidence for their effects on safety behavior. The single-center sample limits the generalizability of findings. Multi-site studies or systematic reviews would be more persuasive.

The study was conducted in a single pediatric ICU, and the unit culture, policies, procedures, and available resources may differ in other institutions. Replicating the study across various pediatric ICUs would validate whether the findings can be generalized. The data collection period of one week may not capture variations in workload that could influence safety behaviors. Although nurses completed questionnaires during designated break periods to minimize interference with patient care, the busy nature of ICU work may still have affected response quality. The study also did not account for potential confounding variables such as workload, burnout levels, or specific hospital policies that could influence safety behaviors. The self-reported nature of the data may introduce response bias, as participants might provide socially desirable answers. Understanding the mechanisms linking organizational support, safety culture, and behavior provides targets for purposefully designed interventions. Efforts may focus on optimizing perceptions of leadership support for

safety, clarifying values and priorities, aligning practices with stated goals, and providing opportunities to openly discuss safety issues.

Conclusions

In summary, this study provides insight into pediatric ICU nurses' safety behavior, culture, and organizational support. Nurses' safety compliance was associated with perceptions of strong safety culture and organizational support. Safety culture perception mediated the relationship between organizational support and safety behavior.

While pediatric ICU nurses recognized safety importance, knowledge and positive attitudes did not necessarily translate into consistent safe behavior. Their safety behavior and perceptions of organizational support could improve. Efforts to strengthen safety culture and support high reliability are needed to enable significant sustained improvements.

Findings suggest addressing cultural and practical safety aspects. Education and interventions should target nurses' shared safety values/commitment and increased systemic support. Aligning organizational goals/priorities can help overcome the gap between ideals and actions. Pediatric ICU tailored evidence-based initiatives may yield better outcomes.

These findings may be generalized to similar pediatric critical care settings, though local organizational factors would need to be considered. The self-reported nature of our data is a limitation that future studies should address through observational methods or other objective measures of safety behavior.

Continuous multidimensional evaluation at all levels provides a foundation for solutions. Future research should explore nurses' experiences to gain insights into optimizing their practice environment and compliance. Studies may examine impacts of specific interventions and how relationships vary in different pediatric critical care settings.

Overall, this research highlights measures to strengthen pediatric ICU nurses' safety behavior and minimize risks. Fostering open communication/learning can enable real sustained improvements in this complex high-stakes field. Enhancing consistency between values and actions is key to patient safety. Collaborative efforts across patients, families, staff and management are vital to advancing care quality and outcomes for critically ill children.

Data Sharing Statement

All data generated or analyzed during this study are included in this article. Further enquiries can be directed to the corresponding author.

Ethics Approval and Consent to Participate

The study procedures were conducted in accordance with the ethical standards outlined in the Declaration of Helsinki. This study was approved by the Medical Ethics Committee of Capital Institute of Pediatrics (approval number SHERLL2020048). Written informed consent was obtained from all participants.

Acknowledgments

We thank all of those who contributed to this work.

Disclosure

The authors report no conflicts of interest in this work.

References

1. Liu Y. Analysis of adverse events in a hospital setting: a retrospective study in a teaching hospital. *Int J Environ Res Public Health*. 2020;17(11):3952. doi:10.3390/ijerph17113952
2. Stockwell DC, Bisarya H, Classen DC, et al. A trigger tool to detect harm in pediatric inpatient settings. *Pediatrics*. 2015;135(6):1036–1042. doi:10.1542/peds.2014-2152
3. Matlow AG, Baker GR, Flintoft V, et al. Adverse events among children in Canadian hospitals: the Canadian Paediatric Adverse Events Study. *CMAJ*. 2012;184(13):E709–18. doi:10.1503/cmaj.112153
4. Caesens G, Stinglhamer F. Toward a More Nuanced View on Organizational Support Theory. *Front Psychol*. 2020;11:476. doi:10.3389/fpsyg.2020.00476

5. Ali MXM, Arifin K, Abas A, et al. Systematic literature review on indicators use in safety management practices among utility industries. *Int J Environ Res Public Health*. 2022;19(10):6198. doi:10.3390/ijerph19106198
6. Elmoujaddidi F, Bachir A. Perceived risk, safety climate and safety behavior on Moroccan construction sites. *Int J Occup Saf Ergon*. 2020;26(1):121–128. doi:10.1080/10803548.2018.1546461
7. Dyreborg J, Lipscomb HJ, Nielsen K, et al. Safety interventions for the prevention of accidents at work: a systematic review. *Campbell Syst Rev*. 2022;18(2):e1234. doi:10.1002/cl2.1234
8. Abdullah A. Patient safety culture and its impact on healthcare workers' safety behaviors: a systematic review. *BMC Health Serv Res*. 2021;21(1):89.
9. Liao C, Qin Y, He Y, Guo Y. The nurse–nurse collaboration behavior scale: development and psychometric testing. *Int J Nurs Sci*. 2015;2(3):296–303.
10. Javadi M, Kadkhodae M, Yaghoubi M, Mahdavi M, Shams A. Applying theory of planned behavior in predicting of patient safety behaviors of nurses. *Mater Sociomed*. 2013;25(1):52–55. doi:10.5455/msm.2013.25.52-55
11. Ma F, Zhu Y, Liu L, Chen H, Liu Y. Work engagement and safety behavior of nurses in specialized cancer hospitals: the mediating role of self-efficacy. *J Nurs Res*. 2023;31(2):e21456.
12. Wen Z, Ye B. Mediation analysis using bootstrapping. *J Educ Psychol Meas*. 2014;74(4):649–679.
13. Wang Y. Organizational support and its role in improving safety behaviors in healthcare settings: a systematic review. *J Patient Saf*. 2020;16(3):e143–e149. doi:10.1097/PTS.0000000000000274
14. Li J. The role of safety culture in mediating the relationship between organizational support and healthcare workers' safety behaviors. *BMC Health Serv Res*. 2021;21(1):98. doi:10.1186/s12913-021-06101-3
15. Singer SJ, Gaba DM, Falwell A, Lin S, Hayes J, Baker L. Patient safety climate in 92 US hospitals: differences by work area and discipline. *Med Care*. 2009;47(1):23–31. doi:10.1097/MLR.0b013e31817e189d
16. Kim SH. The impact of organizational support on safety behaviors in healthcare: a multi-center study. *Int J Environ Res Public Health*. 2020;17(5):1593. doi:10.3390/ijerph17051593
17. Liu Y. Safety culture and its role in improving safety outcomes: a study of healthcare workers. *J Nurs Manag*. 2021;29(6):1045–1052.
18. Nguyen HT. Organizational support and safety culture: key factors in promoting safe behaviors in critical care environments. *J Crit Care*. 2022;68:69–75.

Risk Management and Healthcare Policy

Publish your work in this journal

Risk Management and Healthcare Policy is an international, peer-reviewed, open access journal focusing on all aspects of public health, policy, and preventative measures to promote good health and improve morbidity and mortality in the population. The journal welcomes submitted papers covering original research, basic science, clinical & epidemiological studies, reviews and evaluations, guidelines, expert opinion and commentary, case reports and extended reports. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <https://www.dovepress.com/risk-management-and-healthcare-policy-journal>

Dovepress
Taylor & Francis Group