

# Impact of patient-safety incidents on Korean nurses' quality of work-related life: A descriptive correlational study

Sun Aee Kim<sup>1</sup>  | Taewha Lee<sup>2</sup>

<sup>1</sup>Management Planning Team, CHA Bundang Medical Center, Seongnam, South Korea

<sup>2</sup>Mo-Im Kim Nursing Research Institute, Yonsei University College of Nursing, Seoul, South Korea

## Correspondence

Taewha Lee, Mo-Im Kim Nursing Research Institute, Yonsei University College of Nursing, 50-1 Yonsei-ro, Seodaemun-gu, Seoul 03722, South Korea.  
Email: [twlee5@yuhs.ac](mailto:twlee5@yuhs.ac) and [twlee502@gmail.com](mailto:twlee502@gmail.com)

## Abstract

**Aim:** We investigated the impact of patient safety incidents on the quality of nurses' work-related lives, based on the Culture–Work–Health model.

**Design:** Descriptive correlational study.

**Methods:** An online survey was administered between March 10 and 18, 2020 to 622 nurses in South Korea who had experienced patient safety incidents within the past year. Descriptive analysis was performed along with inferential statistics, including one-way ANOVA, correlation, and multiple linear regression ( $p < 0.05$ ).

**Results:** A multiple linear regression analysis was used to identify factors affecting participants' quality of work-related life. Significantly influential factors were resonant leadership, just culture, organizational support, organizational health, and overall work experience.

**Conclusions:** Resonant leadership and culture positively affects nurses' quality of work-related life. Therefore, it is critical to evaluate nurses' perceptions of these factors and use these factors in creating administrative interventions to assist nurses in improving their work experiences.

## KEYWORDS

leadership, life quality, nurses, organizational culture, patient safety

## 1 | INTRODUCTION

After the Institute of Medicine published the report “To Err is Human: Building a Safer Health System” in 1999, interest in patient safety increased, and related issues were reflected as important health policies. Nevertheless, patient safety incidents occur daily in the medical sphere, and coverage of patient safety incidents is inadequate worldwide. In European Union member states, about 8%–12% of medical errors and healthcare-related patient safety incidents were reported among hospitalizations (World Health Organization, 2020).

Another study estimated that the occurrence of patient safety incidents ranged between 51.2% and 63.0% over the past 12 months

(Kakemam et al., 2021). South Korea has no accurate statistics for patient safety incidents. According to Korean patient safety incident report data, these numbers increased each year, rising by 16.4% during 2019–2020 (KOPS, 2021).

Patient safety incidents affect both patients and healthcare providers. Unexpected patient injuries, deaths or harm often cause psychological trauma and various personal, emotional, and professional problems for healthcare providers (Burlison et al., 2021). These problems are amplified because any healthcare provider is susceptible to such patient safety incidents or medical errors. In fact, about 29.1% of nurses have experienced patient safety incidents at least once over the past 6 months (Kakemam

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2023 The Authors. *Nursing Open* published by John Wiley & Sons Ltd.

et al., 2019). Moreover, 47.8% of healthcare providers who experienced patient safety incidents reported traumatic symptoms and reactions (Finney et al., 2021). These symptoms include sleep disorders, burnout, decreased job satisfaction, feelings of guilt and anger, and fear of punishment (Vanhaecht et al., 2019). Such symptoms and reactions can harm healthcare providers' psychological and physical health, and increase the possibility of committing other errors or providing suboptimal services, if not treated promptly and appropriately. Eventually, those problems affect healthcare providers' overall quality of working life (Vanhaecht et al., 2019).

## 2 | BACKGROUND

"Quality of working life" refers to employees' perceptions of physical and psychological health regarding professional experiences and their professional satisfaction (Abbasi et al., 2017). Factors impacting the quality of one's working life include organizational culture, clinical competence, burnout, and social support (Ghouligaleh et al., 2018). For nurses, healthcare services and patient safety are particularly relevant (Kowitlawkul et al., 2019). Patient safety incidents lower nurses' quality of working life through physical and psychological distress, leading to absenteeism, intentions to resign, and increased staff turnover (Burlison et al., 2021). However, some methods can help nurses recover and maintain their professional attitudes. For instance, stress symptoms can be alleviated by non-punitive work environments, open discussions of incidents, exchanges of incident-related information with co-workers, and constructive feedback from supervisors or organizations (Quillivan et al., 2016). Moreover, creating just cultures reduces distress following patient safety incidents, and combined with good leadership and management support, help nurses cope with guilt and shame (Schröder et al., 2019).

Many studies emphasized the importance of supporting healthcare providers suffering from distress caused by patient safety incidents (Edrees & Wu, 2021; Schröder et al., 2019). However, few specifically examined how patient safety incidents affect nurses' quality of life at work.

This study investigates the factors influencing the quality of working life for nurses who had experienced patient safety incidents. The Culture-Work-Health model (Peterson & Wilson, 2002) was used to systematically examine the relationships between quality of working life, organizational culture, resonant leadership, and organizational support, in determining employee and organizational health.

### 2.1 | Research question

Our research question was: What factors affect the quality of work life on nurses who have experienced patient safety incidents?

## 3 | THE STUDY

### 3.1 | Design

In this cross-sectional study, participants were nurses who provided direct care in South Korea's general or tertiary general hospitals, and who had experienced patient safety incidents within the preceding year, i.e., between March 2019 and February 2020.

### 3.2 | Method

The sample size was based on literature stipulating that the number of participants required to perform multiple regression analysis should be 10–20 times the number of independent variables (Harrell, 2015). In this study, the minimum sample based on 27 predictors was calculated to be 270 participants.

To access the study population, the researcher contacted an online membership community for nursing professionals in South Korea and recruited those who were interested in the study.

Considering the membership count and evidence of a 14%–30% chance of healthcare providers experiencing patient safety incidents in a year (Kakemam et al., 2019; Scott et al., 2009), about 2800–6000 members were expected to meet the conditions of the study. However, in Korea, prior studies conducted on online platform surveys have reported a response rate of 23.6% (Ahn et al., 2013).

Further, high bias rates due to unreliable responses have also been reported for online surveys, which could have impacted participation in this study, as nurses might have been reluctant to share their personal experiences on the online forum. Therefore, 622 nurses were invited via e-mail to participate in the study.

Quality of working life was measured using 23 items from the Work-Related Quality of Life scale developed by Van Laar et al. (2007). The five-point Likert scale that was used ranged from 1 = "Strongly disagree" to 5 = "Strongly agree," with higher average scores indicating a higher quality of working life. The Just Culture Assessment Tool of Petschonek et al. (2013) was used to measure organizational culture. The applicable five-point Likert scale ranged from 1 = "Strongly disagree" to 5 = "Strongly agree," with higher scores indicating better organizational cultures. Resonant leadership was measured using the Resonant Leadership Scale of Estabrooks et al. (2009), comprising 10 items. The five-point Likert scale that was employed ranged from 1 = "Strongly disagree" to 5 = "Strongly agree," with higher scores indicating higher levels of resonant leadership.

Employee health, organizational health, and organizational support were measured using the Second Victim Experience and Support Tool of Burlison et al. (2017). Employees' health was measured by using 12 items to assess psychological distress, physical distress, and reduced professional self-efficacy. The five-point Likert scale developed to that end ranged from 1 = "Strongly disagree" to 5 = "Strongly agree," and reverse-scored items were included. Higher scores indicated lower

levels of employee health. Organizational health was evaluated, using three items with which turnover intention and absenteeism were measured. The relevant five-point Likert scale ranged from 1 = "Strongly disagree" to 5 = "Strongly agree," and reverse-scored items were included. Higher scores indicated lower levels of organizational health.

Organizational support was measured using 11 items to assess the support received from colleagues, supervisors, and institutions. The five-point Likert scale used for that purpose ranged from 1 = "Strongly disagree" to 5 = "Strongly agree," and reverse-scored items were included. Higher scores indicated higher levels of organizational support. Lastly, types of patient safety incidents and duration of stress experienced after such incidents were measured.

Data were collected through online surveys during March 10–18, 2020. The survey URL was emailed to target participants, with a message of invitation to complete an online survey on their experiences of patient safety incidents during the previous year.

### 3.3 | Analysis

Data were analysed using IBM's Statistical Package for the Social Sciences version 26.0. Descriptive statistics were presented as real numbers, percentages, means, and standard deviations.

Participants reported 1026 patient safety incidents, segregated by type and analysed as frequencies. Employee health, organizational health, organizational support, and quality of working life were analysed using *t*-tests and analysis of variance (ANOVA). Significant variables from the ANOVA results were further examined using the Scheffé test.

Correlation analyses (Pearson's *r*) were conducted for each variable. Multiple regression analyses of variables, including age, marital status, education, hospital experience, total duration of nursing experience, employee health, organizational health, organizational support, just culture, and resonant leadership, were conducted to identify factors influencing participants' work-related quality of life. Multicollinearity of measured variables was detected by examining tolerances and variation inflation factors (VIFs). The *p*-value was set at 0.05 for all tests (Estabrooks et al., 2009).

### 3.4 | Ethics

This study was approved by the Institutional Review Board of the Bundang CHA Medical Center in South Korea (IRB No.2019-11-060-003). An informed consent form guaranteeing participants' anonymity, confidentiality, and rights to voluntarily withdraw from the study at any point was included in the survey invitation email and link.

## 4 | RESULTS

A total of 1222 participants accessed the survey link (16.4% response rate). Of those, 214 (17.5%) did not meet the inclusion

criteria; 332 (27.1%) were eliminated due to incomplete data; and 54 (4.4%) outlier, inaccurate, or incomplete responses were eliminated. Finally, 622 responses were examined (Figure 1).

Participants' average age was  $31.51 \pm 6.56$  years, 93% were female, 76% had a bachelor's degree, and the average nursing experience was  $5.66 \pm 5.58$  years (Table 1).

Average variables scores were as follows,  $3.35 \pm 0.58$  for employee health,  $3.18 \pm 0.94$  for organizational health,  $3.23 \pm 0.54$  for organizational support,  $3.28 \pm 0.50$  for just culture,  $3.16 \pm 0.74$  for resonant leadership, and  $2.92 \pm 0.55$  for the 23 work-related quality-of-life items (Table 2).

Regarding employee health, female participants scored higher than males ( $3.37 \pm 0.58$  and  $3.10 \pm 0.62$ , respectively). Participants with 1–3 years' experience had the highest employee health scores ( $3.5 \pm 0.561$ ; Table 1). Regarding organizational health, participants working in multiple units, such as intravenous nurses and nurse practitioners, reported the lowest scores ( $2.76 \pm 0.92$ ). As regards quality of working life, participants with >10 years of nursing experience and working in multiple units reported the highest scores ( $3.03 \pm 0.46$  and  $3.15 \pm 0.55$ , respectively; Table 1).

Participants reported 1026 patient safety incidents during the preceding year, the most common being medication errors (30.5%), falls/slips (29.5%), and extravasation or phlebitis (13.6%).

The quality of work life of nurses who had experienced patient safety incidents had a positive correlation with a just culture ( $r = 0.553$ ,  $p < 0.01$ ), resonant leadership ( $r = 0.591$ ,  $p < 0.01$ ), and organizational support ( $r = 0.505$ ,  $p < 0.01$ ), and a negative correlation with employee health ( $r = 0.159$ ,  $p < 0.01$ ), and organizational health ( $r = -0.284$ ,  $p < 0.01$ ).

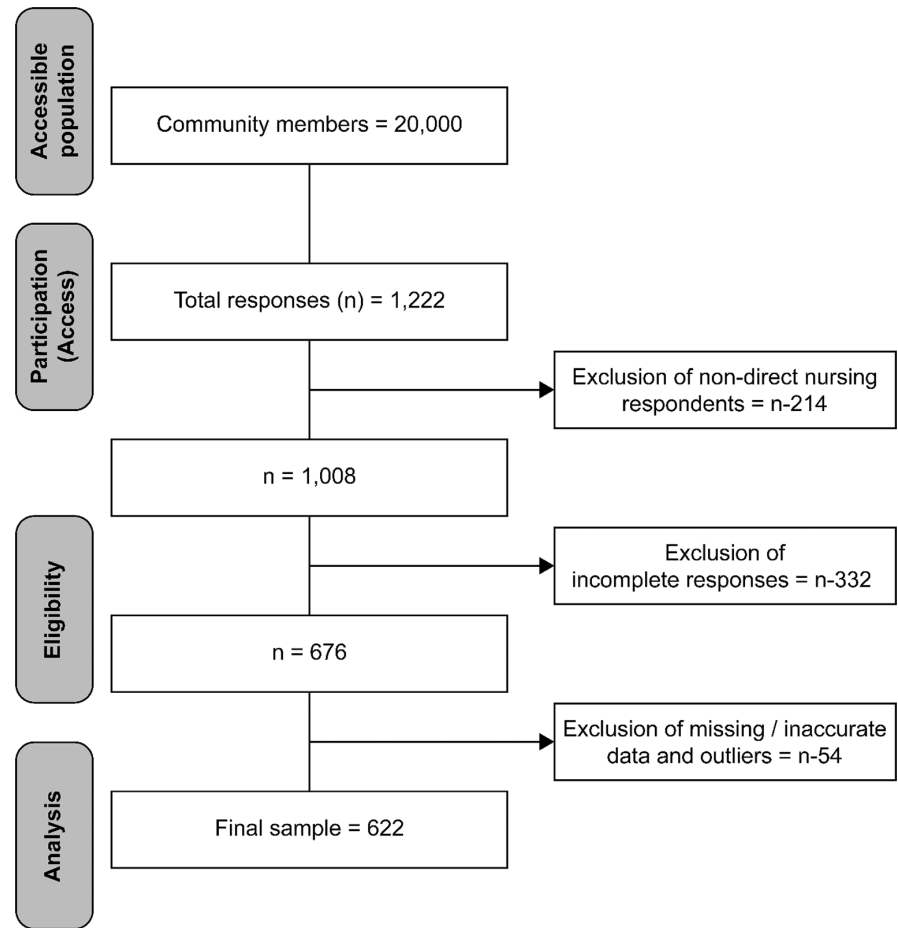
Correlation tolerance and tolerance limits among independent variables were examined during multiple regression analysis to investigate multicollinearity. Correlation among independent variables was  $< 0.80$ ; therefore, all were analysed. The tolerance limits were 0.454–0.813,  $< 1.0$ . VIFs for all variables were 1.229–2.204 and  $< 10$ , negating the presence of multicollinearity. The model explained 46% (adjusted  $R^2 = 0.452$ ) of variance in quality of working life. Statistically significant factors influencing quality of working life were marital status ( $\beta = 0.070$ ,  $t = 2.106$ ,  $p < 0.05$ ), total nursing experience ( $\beta = 0.117$ ,  $t = 2.723$ ,  $p < 0.001$ ), resonant leadership ( $\beta = 0.352$ ,  $t = 8.245$ ,  $p < 0.001$ ), just culture ( $\beta = 0.202$ ,  $t = 4.578$ ,  $p < 0.001$ ), organizational support ( $\beta = 0.124$ ,  $t = 2.981$ ,  $p < 0.01$ ), and organizational health ( $\beta = -0.114$ ,  $t = -2.992$ ,  $p < 0.01$ ) (Table 3).

## 5 | DISCUSSION

This study examined how patient safety incidents affect the quality of nurses' working lives, based on Peterson and Wilson's (2002) conceptual framework of the Culture-Work-Health model.

Participants predominantly reported experiencing medication errors, followed by falls/slips. However, relationships between types and severities of patient safety incidents and quality of working life

FIGURE 1 Flow diagram for the sampling procedure.



were not statistically significant. Yet, these experiences did affect Korean nurses.

The Work-Related Quality of Work Life scale in this study had never been used in South Korea, and there is still little interest in the quality of nurses' working life. This study focused only on nurses who had experienced patient safety incidents. Subsequent studies should be repeated and expanded to be able to compare these nurses with those who had not experienced the same and to ascertain any differences in their quality of working lives.

Participants' overall quality of working life was lower than that of nurses working in Iran (Lebni et al., 2021). Similarly, average satisfaction score was lower than that reported by nurses in the Philippines (Barandino & Soriano, 2019) and Athens (Fradelos et al., 2021). This is consistent with the result that patient safety incidents affect the quality of work life (Burlison et al., 2021).

Factors demonstrating the strongest correlations with quality of working life were resonant leadership, just culture, organizational support, and organizational health. Higher perceptions of resonant leadership correlated with higher quality of working life, consistent with previous findings emphasizing the relationship between leadership and quality of working life (Cheewaparakobkit & Chulapetch, 2020). Similarly, Lee and Ryu (2017) reported that resonant leadership affects structural empowerment and eventually determines nurses' quality of working life. A study on Canadian nurses found that resonant leadership significantly affects job satisfaction

(Bawafaa et al., 2015). Furthermore, studies on resonant leadership asserted the indispensable role of leaders who can understand the physical, psychological, and professional distress nurses experienced after patient safety incidents and maintain trusting relationships with them. For instance, other studies have demonstrated that resonant leadership practices generate positive outcomes, such as increased job satisfaction, stronger organizational support, higher retention rates, and improved employee health (Ali & Kashif, 2020; Bawafaa et al., 2015; Laschinger et al., 2014). Therefore, reinforcing resonant leadership can be an effective mediation strategy for improving nurses' quality of working life.

The second-most influential factor was perception of a just organizational culture. This finding aligns with the theory behind the Culture-Work-Health model, which stipulates that organizational culture is associated with quality of working life. The physical, psychological, and professional distress following patient safety incidents affects healthcare providers' well-being and decreases their quality of working life (Burlison et al., 2021). Similarly, this study found that employee and organizational health were associated with decreased employee health, correlating with decreased organizational health, and vice versa. Another study suggests that just cultures provide supportive working environments where mistakes are discussed openly without criticism and punishment, and health providers suffer less distress (Schröder et al., 2019). Additionally, just cultures have a partial mediating effect on organizational health.

TABLE 1 Employee health, organizational health, and quality of working life in relation to the participants' characteristics (n = 622).

Characteristics	Categories	n (%)	Employee health			Organizational health			Quality of working life		
			Mean ± SD	t/F	p (Scheffe' test)	Mean ± SD	t/F	p (Scheffe' test)	Mean ± SD	t/F	p (Scheffe' test)
Gender	Male	42 (6.8)	3.10 ± 0.62	-2.935	0.003**	2.83 ± 1.00	-2.446	0.015*	3.03 ± 0.57	1.333	0.183
	Female	580 (93.2)	3.37 ± 0.58			3.20 ± 0.93			2.91 ± 0.55		
Age (year)	≤25 (a)	98 (15.8)	3.35 ± 0.56	0.272	0.846	3.19 ± 0.91	0.170	0.917	2.80 ± 0.68	6.724	0.000**
	26–30 (b)	253 (40.7)	3.34 ± 0.60			3.15 ± 0.97			2.85 ± 0.55		a,b < c,d
	31–40 (c)	202 (40.2)	3.35 ± 0.58			3.18 ± 0.93			3.00 ± 0.51		
	40 (d)	69 (11.1)	3.41 ± 0.58			3.24 ± 0.94			3.08 ± 0.43		
Marriage	Single	398 (64.0)	3.34 ± 0.59	-0.727	0.467	3.15 ± 0.96			2.85 ± 0.59	-3.866	0.000**
	Married	224 (36.0)	3.38 ± 0.56			3.21 ± 0.92			3.03 ± 0.46		
Education	Bachelor's (3-year)	71 (11.4)	3.27 ± 0.63	1.288	0.277	3.10 ± 0.92	0.736	0.479	2.93 ± 0.59	5.660	0.004*
	Bachelor's (4-year)	475 (76.4)	3.36 ± 0.59			3.17 ± 0.96			2.88 ± 0.55		b < c
	≥Master's	76 (12.2)	3.43 ± 0.49			3.29 ± 0.82			3.11 ± 0.46		
Total nursing experience (months)	≤12 (a)	65 (10.5)	3.25 ± 0.56	3.173	0.013*	3.04 ± 0.90	1.733	0.098	2.77 ± 0.64	5.412	0.000***
	13–36 (b)	105 (16.9)	3.51 ± 0.56		b > c	3.34 ± 0.95			2.76 ± 0.65		a,b < e
	37–60 (c)	91 (14.6)	3.25 ± 0.59			3.01 ± 0.98			2.97 ± 0.55		
	61–120 (d)	190 (30.5)	3.35 ± 0.58			3.17 ± 0.95			2.93 ± 0.51		
	≥121 (e)	171 (27.5)	3.36 ± 0.59			3.21 ± 0.91			3.03 ± 0.46		
Present hospital experience (months)	≤12 (a)	101 (16.2)	3.28 ± 0.63	0.731	0.571	3.02 ± 0.97	1.693	0.150	2.82 ± 0.63	3.398	0.009**
	13–36 (b)	170 (27.3)	3.40 ± 0.57			3.26 ± 0.93			2.85 ± 0.61		a,b < e
	37–60 (c)	109 (17.5)	3.32 ± 0.59			3.09 ± 0.95			2.92 ± 0.54		
	61–120 (d)	144 (23.2)	3.36 ± 0.58			3.16 ± 0.97			2.95 ± 0.48		
	≥121 (e)	98 (15.8)	3.39 ± 0.55			3.30 ± 0.87			3.07 ± 0.45		

TABLE 1 (Continued)

Characteristics	Categories	n (%)	Employee health			Organizational health			Quality of working life		
			Mean ± SD	t/F	p (Scheffe' test)	Mean ± SD	t/F	p (Scheffe' test)	Mean ± SD	t/F	p (Scheffe' test)
Department	Unaffiliated <sup>a</sup>	40 (6.4)	3.25 ± 0.68	0.952	0.490	2.76 ± 0.92	2.118	0.018*	3.15 ± 0.55	2.778	0.002**
	Internal medicine ward	133 (21.4)	3.33 ± 0.61			3.29 ± 0.96			2.88 ± 0.60		
	Surgical ward	113 (18.2)	3.38 ± 0.55			3.29 ± 0.85			2.77 ± 0.54		
	Comprehensive nursing unit	49 (7.9)	3.30 ± 0.64			3.22 ± 0.99			2.95 ± 5.26		
	Endoscopy	16 (2.6)	3.35 ± 0.51			2.94 ± 0.99			3.10 ± 0.55		
	Emergency room	83 (13.3)	3.28 ± 0.62			3.22 ± 1.00			2.93 ± 0.53		
	Out-patient department	57 (9.2)	3.34 ± 0.52			3.27 ± 0.77			2.95 ± 0.55		
	Operation room	25 (4.0)	3.30 ± 0.44			3.04 ± 0.80			3.04 ± 0.41		
	Delivery room	5 (0.8)	3.65 ± 0.22			2.27 ± 0.86			3.00 ± 0.55		
	Intensive care unit	90 (14.5)	3.48 ± 0.55			3.11 ± 1.03			2.81 ± 0.54		
	Haemodialysis room	11 (1.8)	3.58 ± 0.46			3.70 ± 0.69			3.06 ± 0.34		

Abbreviation: SD, standard deviation.

\**p* < .05.\*\**p* < .01.\*\*\**p* < .001.<sup>a</sup> Unaffiliated: included intravenous team nurse, wound care nurse, oncology nurse specialist, nurse practitioners, etc.

TABLE 2 Descriptive statistics of the observed variables ( $n = 622$ ).

Variable	Range	Mean $\pm$ SD
Just culture	1-5	3.28 $\pm$ 0.50
Resonant leadership	1-5	3.16 $\pm$ 0.74
Organizational support	1-5	3.23 $\pm$ 0.54
Colleague support		3.43 $\pm$ 0.61
Supervisor support		3.25 $\pm$ 0.71
Institutional support		2.78 $\pm$ 0.87
Employee health	1-5	3.35 $\pm$ 0.58
Psychological distress		3.83 $\pm$ 0.69
Physical distress		2.97 $\pm$ 0.82
Professional distress		3.25 $\pm$ 0.67
Organizational health		3.18 $\pm$ 0.94
Turnover intention		3.18 $\pm$ 1.00
Absenteeism		3.16 $\pm$ 1.10
Quality of working life	1-5	2.92 $\pm$ 0.55
Job and career satisfaction		3.12 $\pm$ 0.54
Control at work		3.27 $\pm$ 0.69
Working conditions		2.80 $\pm$ 0.72
Stress at work		2.43 $\pm$ 0.86
Homework interface		2.78 $\pm$ 0.81
General well-being		2.80 $\pm$ 0.71
Overall quality of work life		2.85 $\pm$ 0.88

Abbreviation: SD, standard deviation.

These findings corroborate a previous study wherein positive perceptions of organizational culture were found to alleviate physical, psychological, and professional distress, and enable effective coping mechanisms in response to patient safety incidents (Quillivan et al., 2016).

The third-most influential factor was organizational support, which positively correlated with quality of working life and mediated employee and organizational health. These findings are congruent with previous results demonstrating that a higher perception of organizational support among Korean clinical nurses is associated with a higher quality of working life (Kim & Ryu, 2015). Nurses predominantly desired organizational support in terms of being able to share their concerns, empathize, and openly discuss incidents that occurred, with their colleagues (Burlison et al., 2021). For instance, a study on Singaporean nurses showed that social support, including from supervisors and colleagues, is a significant predictor of nurses' quality of work life (Kowitlawkul et al., 2019). Another study found that quality of such support is crucial for nurses who experienced adverse events (Mok et al., 2020). Burlison et al. (2021) found that organizational support alleviates physical and psychological distress associated with patient safety incidents, fosters recovery, and reduces turnover intention and absenteeism. Sharif et al. (2018) asserted that nurses' perception of organizational support is associated

with their psychological well-being, and supervisor support is a primary factor influencing their quality of work life. Further, these findings agree with the results of Kim et al. (2017), wherein participants expressed the need for supervisor, institutional, and co-worker support. It is evident that support from co-workers, supervisors, and institutions, ameliorates the difficulties healthcare providers face after experiencing patient safety incidents and facilitates their return to work and everyday life (Quillivan et al., 2016). These findings suggest that nurses' working lives can be improved by timely providing them with strategic and systematic support from co-workers, supervisors, and administrative staff.

The fourth influential factor was organizational health, which is the state of well-being across an organization. The Culture-Work-Health model provides a theoretical framework for understanding organizational health, based on factors such as productivity, performance, competitiveness, profit, and absenteeism (Peterson & Wilson, 2002). In hospitals, nurses constitute the largest professional group and play the most pivotal role in patient care. However, distress from patient safety incidents affects organizational health. For instance, Burlison et al. (2021) found that patient safety incidents positively correlate with turnover intention and absenteeism. A Korean study showed that patient safety incidents cause various difficulties, such as stress, fear, and reduced self-efficacy, leading to turnover intention or absenteeism, and negatively affecting quality of care (Kim et al., 2018). The psychological and physical distress experienced after being involved in patient safety incidents result in low turnover or absenteeism, leading to a decline in organizational health and quality of working life.

In this study, perceived employee health following patient safety incidents was better than that reported by Kim et al. (2017) in a similar Korean study, but worse than that reported by Burlison et al. (2021) in a study assessing nurses in the United States. However, this study's results imply that employee health is not directly associated with quality of working life, as 80% of participants answered that their feelings of distress reduced within a month. The effect of stress on quality of working life became significant only if it lasted >6 months.

Thus, factors affecting the quality of working life of nurses who experienced patient safety incidents based on the Culture-Work-Health model were identified. A nurse's quality of work life is a quintessential part of patient nursing for individual nurses and organizations. These findings provide several insights for enhancing nurses' quality of working life. For instance, the focus must be shifted from blaming and disciplining the individuals involved in patient safety incidents, to understanding the conditions and circumstances under which the incidents occurred, planning preventive actions, and creating a just culture that fosters learning from past errors (Dukhanin et al., 2018; White & Delacroix, 2020). Moreover, it is crucial to encourage supervisors to be positive, take leadership in handling patient safety incidents, and assign appropriate resources to develop peer and institutional support. Further, maintaining a just organizational culture and resonant leadership is important for maintaining employee and organizational health among nurses, as well as



**TABLE 3** Factors influencing quality of working life ( $n = 622$ ).

Variable	B	SE	$\beta$	t	p
Constant	1.205	0.178		6.771	
Gender (ref. female)	-0.126	0.067	-0.057	-1.874	0.061
Education (ref. bachelor)	0.083	0.052	0.049	1.579	0.115
Married (ref. unmarried)	0.080	0.038	0.070	2.106	0.036
Total nursing experience (ref. <3-year)	0.145	0.053	0.117	2.723	0.007
Just culture	0.222	0.048	0.202	4.578	0.000
Resonant leadership	0.263	0.032	0.352	8.245	0.000
Organizational support	0.126	0.042	0.124	2.981	0.003
Employee health	-0.023	0.035	-0.025	-0.658	0.511
Organization health	-0.067	0.022	-0.114	-2.992	0.003

Note:  $R = 0.460$ , adjusted  $R^2 = 0.452$ ,  $F = 52.122$ .

their quality of working life. It is therefore critical to further assess how positively just cultures and resonant leadership are perceived by nurses in clinical practice and develop relevant interventions.

Continuous efforts to accentuate the organizational culture's strengths and improve its weaknesses after an assessment of the physical, psychological, and professional distress nurses experienced after being involved in patient safety incidents, will improve not only their perceptions about their work but also enhance their capacity to provide proper healthcare services and reduce patient safety incidents.

Most previous research was conducted on healthcare providers' physical and psychological stress experiences and responses after patient safety incidents. However, few studies identified factors affecting the quality of working life of nurses who had experienced patient safety incidents.

Therefore, based on this study's results, the establishment of a positive, just culture in the organization, organizational support such as trustworthy leaders and colleagues, and institutional support, can improve organizational health after the occurrence of patient safety incidents, and can be used to improve nurses' quality of work life. Thus, this can be used as a coping strategy and stress management program for nurses who have experienced patient safety incidents, and as an intervention for quality of life at work. This will ultimately contribute to the management of nursing staff and improvement of patient safety and care quality.

## 5.1 | Limitations

This study focused only on nurses who had experienced patient safety incidents. Subsequent studies must compare these nurses with those who had not experienced the same to investigate any differences in the quality of their working lives.

Further, participants were recruited online and were restricted to nurses working at general and tertiary general hospitals, but the effects of hospital size, geographic location, and presence of patient safety experts were not considered.

## 6 | CONCLUSION

This study corroborated the theoretical framework of the Culture-Work-Health model, which proposes that organizational culture, management systems, organizational health, and employee health affect employees' quality of working life. Therefore, subsequent studies can use these as factors to develop management strategies for improving nurses' quality of working life following patient safety incidents.

When a patient safety incident occurs, trustworthy leadership is needed to facilitate open communication, avoid targeted blame, and consider the circumstances in which the incident occurred, thus establishing a just culture. An organization with a well-established just culture promotes reporting of incidents, rather than punishments. Moreover, it shares incidents, identifies the root cause, prepares countermeasures, and seeks constructive change by learning from their errors. These continued efforts to develop strategies at the organizational level by viewing patient safety incidents systematically rather than personally will improve not only nurses' quality of working life, but also their ability to effectively perform duties and establish a culture promoting patient safety.

It will be necessary to provide organizational support, such as work adjustment, vacation, and professional psychological counseling, by predicting that there may be pain due to safety incidents. This study's results suggest that strategies to strengthen the resonant leadership and to provide support from colleagues, supervisors, and institutions, can be effective intervention methods to improve the quality of work life of nurses who have experienced patient safety incidents.

Initiatives to provide support from colleagues, supervisors, and institutions and to strengthen the resonant leadership can be effective intervention methods for improving the quality of work life of nurses who have experienced patient safety incidents, as well as establishing an organizational culture that promotes patient safety.



## ACKNOWLEDGEMENTS

None.

## FUNDING INFORMATION

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

## CONFLICT OF INTEREST STATEMENT

No conflict of interest has been declared by the authors.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request. The data are not publicly available due to privacy or ethical restrictions.

## ORCID

Sun Aee Kim  <https://orcid.org/0000-0003-3119-9625>

## REFERENCES

- Abbasi, M., Zakerian, A., Akbarzade, A., Dinarvand, N., Ghaljahi, M., Poursadeghiyan, M., & Ebrahimi, M. H. (2017). Investigation of the relationship between work ability and work-related quality of life in nurses. *Iranian Journal of Public Health, 46*(10), 1404–1412.
- Ahn, Y. J., & Kim, J. E. (2013). The relationship between food preference of American university students in overseas exchange student program and unstable cultural communication. *Northeast Asia Tourism Research, 9*(1), 193–213.
- Ali, R., & Kashif, M. (2020). The role of resonant leadership, workplace friendship and serving culture in predicting organizational commitment: The mediating role of compassion at work. *Revista Brasileira de Gestão de Negócios, 22*, 799–819. <https://doi.org/10.7819/rbgn.v22i4.4085>
- Barandino, J. P., & Soriano, G. P. (2019). Practice environment and work-related quality of life among nurses in a selected hospital in Zamboanga, Philippines: A correlational study. *Nursing Practice Today, 6*(4), 223–228. <https://doi.org/10.18502/npt.v6i4.1944>
- Bawafaa, E., Wong, C. A., & Laschinger, H. (2015). The influence of resonant leadership on the structural empowerment and job satisfaction of registered nurses. *Journal of Research in Nursing, 20*(7), 610–622. <https://doi.org/10.1177/1744987115603441>
- Burlison, J. D., Quillivan, R. R., Scott, S. D., Johnson, S., & Hoffman, J. M. (2021). The effects of the second victim phenomenon on work-related outcomes: Connecting self-reported caregiver distress to turnover intentions and absenteeism. *Journal of Patient Safety, 17*(3), 195–199. <https://doi.org/10.1097/PTS.0000000000000301>
- Burlison, J. D., Scott, S. D., Browne, E. K., Thompson, S. G., & Hoffman, J. M. (2017). The second victim experience and support tool: Validation of an organizational resource for assessing second victim effects and the quality of support resources. *Journal of Patient Safety, 13*(2), 93–102. <https://doi.org/10.1097/PTS.0000000000000129>
- Cheewaprabkakit, P., & Chulapetch, B. (2020). The relationship between leadership, quality of working life, compensation, and welfare affecting job satisfaction of hospital employees. *Human Behavior, Development and Society, 21*(3), 77–87.
- Dukhanin, V., Edrees, H. H., Connors, C. A., Kang, E., Norvell, M., & Wu, A. W. (2018). Case: A second victim support program in pediatrics: Successes and challenges to implementation. *Journal of Pediatric Nursing, 41*, 54–59. <https://doi.org/10.1016/j.pedn.2018.01.011>
- Edrees, H. H., & Wu, A. W. (2021). Does one size fit all? Assessing the need for organizational second victim support programs. *Journal of Patient Safety, 17*(3), e247–e254. <https://doi.org/10.1097/PTS.0000000000000321>
- Estabrooks, C. A., Squires, J. E., Cummings, G. G., Birdsell, J. M., & Norton, P. G. (2009). Development and assessment of the Alberta context tool. *BMC Health Services Research, 9*, 234. <https://doi.org/10.1186/1472-6963-9-234>
- Finney, R. E., Torbenson, V. E., Riggan, K. A., Weaver, A. L., Long, M. E., Allyse, M. A., & Rivera-Chiauszi, E. Y. (2021). Second victim experiences of nurses in obstetrics and gynaecology: A second victim experience and support tool survey. *Journal of Nursing Management, 29*(4), 642–652. <https://doi.org/10.1111/jonm.13198>
- Fradelos, E. C., Alexandropoulou, C. A., Kontopoulou, L., Alikari, V., Papagiannis, D., Tsaras, K., & Papatthanasidou, I. V. (2021). The effect of hospital ethical climate on nurses' work-related quality of life: A cross-sectional study. *Nursing Forum, 57*(2), 244–251. <https://doi.org/10.1111/nuf.12671>
- Ghouligaleh, M., Farahani, A. S., Karahroudy, F. A., Pourhoseingholi, M. A., & Mojen, L. K. (2018). The relationship between perceived social support and quality of nurses' working life at neonatal intensive care units in selected hospitals of Ahwaz University of Medical Sciences-2016. *Advances in Nursing & Midwifery, 27*, 49–52. <https://doi.org/10.21859/ANM-027029>
- Harrell, F. (2015). *Regression modeling strategies: With applications to linear models, logistic and ordinal regression, and survival analysis*. Springer.
- Kakemam, E., Hajizadeh, A., Azarmi, M., Zahedi, H., Gholizadeh, M., & Roh, Y. S. (2021). Nurses' perception of teamwork and its relationship with the occurrence and reporting of adverse events: A questionnaire survey in teaching hospitals. *Journal of Nursing Management, 29*(5), 1189–1198. <https://doi.org/10.1111/jonm.13257>
- Kakemam, E., Kalhor, R., Khakdel, Z., Khezri, A., West, S., Visentin, D., & Cleary, M. (2019). Occupational stress and cognitive failure of nurses and associations with self-reported adverse events: A national cross-sectional survey. *Journal of Advanced Nursing, 75*(12), 3609–3618. <https://doi.org/10.1111/jan.14201>
- Kim, E. M., Kim, S., Kim, J., Lee, J., & Na, S. (2017). Effects of nurse's second victim experiences on third victim experiences: Multiple mediation effects of second victim supports. *Quality Improvement in Health Care, 23*(2), 23–34. <https://doi.org/10.14371/QIH.2017.23.2.23>
- Kim, M., & Ryu, E. (2015). Structural equation modeling of quality of work life in clinical nurses based on the culture-work-health model. *Journal of Korean Academy of Nursing, 45*(6), 879–889. <https://doi.org/10.4040/jkan.2015.45.6.879>
- Kim, S. A., Kim, E. M., Lee, J. R., & Oh, E. G. (2018). Effect of nurses' perception of patient safety culture on reporting of patient safety events. *Journal of Korean Academy of Nursing Administration, 24*(4), 319–327. <https://doi.org/10.1111/jkana.2018.24.4.319>
- KOPS. (2021). *Korean patient safety incident report 2020*. Ministry of Health and Welfare, Korea Institute for Healthcare Accreditation. <https://www.kops.or.kr/portal/board/stat/boardList.do>
- Kowitzlaskul, Y., Yap, S. F., Makabe, S., Chan, S., Takagai, J., Tam, W. W. S., & Nurumal, M. S. (2019). Investigating nurses' quality of life and work-life balance statuses in Singapore. *International Nursing Review, 66*(1), 61–69. <https://doi.org/10.1111/inr.12457>
- Laschinger, H. K. S., Wong, C. A., Cummings, G. G., & Grau, A. L. (2014). Resonant leadership and workplace empowerment: The value of positive organizational cultures in reducing workplace incivility. *Nursing Economics, 32*(1), 5.
- Lebni, J. Y., Togholi, R., Abbas, J., Kianipour, N., NeJhaddadgar, N., Salahshoor, M. R., Chaboksavar, F., Moradi, F., & Ziapour, A. (2021). Nurses' work-related quality of life and its influencing demographic factors at a public hospital in western Iran: A cross-sectional study. *International Quarterly of Community Health*

- Education*, 42(1), 37–45. <https://doi.org/10.1177/0272684X20972838>
- Lee, E.-S., & Ryu, S.-W. (2017). Effect of supportive work environment on the job satisfaction of registered nurses: Resonant leadership and structural empowerment. *Korean Journal of Health Service Management*, 11(2), 43–53. <https://doi.org/10.12811/kshsm.2017.11.2.043>
- Mok, W. Q., Chin, G. F., Yap, S. F., & Wang, W. (2020). A cross-sectional survey on nurses' second victim experience and quality of support resources in Singapore. *Journal of Nursing Management*, 28(2), 286–293. <https://doi.org/10.1111/jonm.12920>
- Peterson, M., & Wilson, J. F. (2002). The culture-work-health model and work stress. *American Journal of Health Behavior*, 26(1), 16–24. <https://doi.org/10.5993/ajhb.26.1.2>
- Petschonek, S., Burlison, J., Cross, C., Martin, K., Laver, J., Landis, R. S., & Hoffman, J. M. (2013). Development of the just culture assessment tool: Measuring the perceptions of health-care professionals in hospitals. *Journal of Patient Safety*, 9(4), 190–197. <https://doi.org/10.1097/PTS.0b013e31828fff34>
- Quillivan, R. R., Burlison, J. D., Browne, E. K., Scott, S. D., & Hoffman, J. M. (2016). Patient safety culture and the second victim phenomenon: Connecting culture to staff distress in nurses. *Joint Commission Journal on Quality and Patient Safety*, 42(8), 377–386. [https://doi.org/10.1016/s1553-7250\(16\)42053-2](https://doi.org/10.1016/s1553-7250(16)42053-2)
- Schrøder, K., Lamont, R. F., Jørgensen, J. S., & Hvidt, N. C. (2019). Second victims need emotional support after adverse events: Even in a just safety culture. *BJOG*, 126(4), 440–442. <https://doi.org/10.1111/1471-0528.15529>
- Scott, S. D., Hirschinger, L. E., Cox, K. R., McCoig, M., Brandt, J., & Hall, L. W. (2009). The natural history of recovery for the healthcare provider "second victim" after adverse patient events. *Quality & Safety in Health Care*, 18(5), 325–330. <https://doi.org/10.1136/qshc.2009.032870>
- Sharif, S. P., Ahadzadeh, A. S., & Nia, H. S. (2018). Mediating role of psychological well-being in the relationship between organizational support and nurses' outcomes: A cross-sectional study. *Journal of Advanced Nursing*, 74(4), 887–899. <https://doi.org/10.1111/jan.13501>
- Van Laar, D., Edwards, J. A., & Easton, S. (2007). The work-related quality of life scale for healthcare workers. *Journal of Advanced Nursing*, 60(3), 325–333. <https://doi.org/10.1111/j.1365-2648.2007.04409.x>
- Vanhaecht, K., Seys, D., Schouten, L., Bruyneel, L., Coeckelberghs, E., Panella, M., & Zeeman, G. (2019). Duration of second victim symptoms in the aftermath of a patient safety incident and association with the level of patient harm: A cross-sectional study in The Netherlands. *BMJ Open*, 9(7), e029923. <https://doi.org/10.1136/bmjopen-2019-029923>
- White, R. M., & Delacroix, R. (2020). Second victim phenomenon: Is 'just culture' a reality? An integrative review. *Applied Nursing Research*, 56, 151319. <https://doi.org/10.1016/j.apnr.2020.151319>
- World Health Organization. (2020). *Data and statistics*. <https://www.euro.who.int/en/health-topics/Health-systems/patient-safety/data-and-statistics>

**How to cite this article:** Kim, S. A., & Lee, T. (2023). Impact of patient-safety incidents on Korean nurses' quality of work-related life: A descriptive correlational study. *Nursing Open*, 10, 3862–3871. <https://doi.org/10.1002/nop2.1644>