



Research Article

Current Status and Influencing Factors of Decisional Conflict in Adverse Event Reporting Among Operating Room Nurses

Miao Feng Lin[#], Xiao Qian Tang^{*}, Meng Ya Nan, Yang Ting, Dian Ye Yao

Department of Operating Room, The First Affiliated Hospital of Sun Yat-sen University, No. 58 Zhongshan Second Road, Guangzhou, 510080, Guangdong, China

[#]Contributed equally

***Corresponding author:** Xiao Qian Tang, Department of Operating Room, The First Affiliated Hospital of Sun Yat-sen University, No. 58 Zhongshan Second Road, Guangzhou, 510080, Guangdong, China

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Abstract

Objective: To investigate the current status of decision-making conflicts regarding the reporting of adverse events among operating room nurses, and to analyze its influencing factors, thereby providing a reference basis for nursing administrators in formulating targeted intervention strategies. **Methods:** Using a convenience sampling method, 310 operating room nurses from Grade III, Level A general hospitals in Guangdong Province were selected as study subjects between June and August 2026. Data collection involved the General Information Questionnaire, the Chinese Version of the Decision Conflict Scale (DCS), the Adverse Event Reporting Obstacle Scale, and the Adverse Event Reporting Cognitive and Attitude Questionnaire. Data analysis was performed using SPSS 26.0 software, employing descriptive statistics, t-tests, one-way ANOVA, Pearson correlation analysis, and binary logistic regression analysis. **Results:** The standardized total score on the Decision Conflict Scale among 310 operating room nurses was (44.13 ± 10.60) , with a decision conflict incidence rate of 74.2%. Univariate analysis revealed that gender, age, and total nursing work experience significantly influenced the decision conflict scores ($P < 0.05$). Pearson correlation analysis demonstrated a significant negative correlation between the total cognitive and attitude scores and the total decision conflict score " $r = -0.454, P < 0.01$ ", while no significant correlation was observed between reporting barriers and decision conflict " $r = 0.041, P > 0.05$ ". Binary logistic regression analysis identified total nursing work experience (5–10 years: OR = 0.136, 95% CI: 0.031–0.601; 11–20 years: OR = 0.203, 95% CI: 0.042–0.973) and the total cognitive and attitude scores (OR = 0.951, 95% CI: 0.931–0.972) as independent influencing factors for decision conflict ($P < 0.05$). **Conclusion:** The incidence of decision-making conflicts regarding adverse event reporting among operating room nurses is relatively high; junior nurses with less than 5 years of experience constitute a high-risk group for such decision-making conflicts, while cognitive awareness and attitudes serve as protective factors against these conflicts. Nursing administrators should prioritize support for junior nurses by implementing systematic training programs to enhance their understanding of adverse event reporting, establishing a tiered training system, and creating a reporting consultation and support mechanism, thereby reducing decision-making conflicts in nurse reporting practices and increasing the proactive reporting rate of adverse events.

Keywords: Operating room nurses; adverse event reporting; decision-making conflict; influencing factors

Introduction

Patient safety is a core issue in healthcare quality management. The World Health Organization (WHO) has stated that millions of patients worldwide suffer injury or even death each year due to unsafe medical services [1]. The 1999 report *To Err Is Human* issued by the U.S. Institute of Medicine (IOM) revealed that preventable medical errors cause between 44,000 and 98,000 deaths annually in the United States [2]. Nursing adverse events—defined as unexpected incidents occurring during hospitalization, such as patient falls, medication errors, patient elopement, aspiration, scalds, and other safety-related events—are significant threats to patient safety. Active reporting of adverse events is widely recognized as an effective strategy for identifying system deficiencies, learning from mistakes, and preventing recurrence of similar events [3]. In 2011, the Chinese Ministry of Health listed “active reporting of medical safety (adverse) events” as one of the top ten patient safety goals for healthcare institutions [3].

The operating room (OR) is the core setting for surgical procedures and emergency patient care in hospitals, characterized by high technical demands, a fast-paced work environment, and substantial risk. According to the WHO, unsafe surgical procedures and nursing processes may lead to complications in up to 25% of patients [4]. A wide variety of adverse events can occur in the OR, including patient injuries from improper positioning, issues with pathological specimen management, retained surgical instruments, medication errors, and electrosurgical injuries [5]. International studies have reported that the incidence of adverse events in surgical centers can reach 16% [5]. However, the reporting rate of such events in the OR has remained persistently low. A survey abroad found that 64% of surgeons do not report “near-miss” events, and only 59% report adverse events that cause significant patient harm [6]. Similarly, domestic studies have indicated that the active reporting rate among OR nurses is far lower than the actual number of events [7,9].

Nurses’ attitudes toward adverse event reporting are significant predictors of their reporting behavior. In recent years, domestic researchers have conducted extensive investigations into nurses’ cognition, attitudes, and influencing factors regarding adverse event reporting. Lian Min et al. [8] developed the “Questionnaire on Cognition and Attitudes toward Adverse Event Reporting,” which has been widely applied among clinical nurses. Their study revealed that the positive response rate for reporting cognition was only 54.60%, indicating that nurses remain inadequately informed about reporting policies and procedures. Chang Sainan’s survey of operating room nurses in tertiary hospitals in Jilin Province

reported a total score of (68.00 ± 7.2) for adverse event reporting attitudes, which was at a moderate level; educational background, years of experience in the operating room, professional title, and employment type were identified as the primary influencing factors [9]. Sun Kuili et al., in a survey of 540 operating room nurses from four general hospitals in Wuhan, found that punitive culture, reporting procedures, length of service, and interpersonal relationships were the main determinants of nurses’ intention to report patient safety events [7]. Bao Anzhu et al. reported that “fear of affecting performance evaluations and professional promotion” and “concern about being sued by patients or their families” were the foremost barriers to voluntary reporting among operating room nurses [10]. However, the aforementioned studies primarily focused on nurses’ willingness to report (i.e., whether they are willing to report), with limited exploration of the internal decision-making process nurses undergo when deciding “whether to report or not.”

When faced with the dilemma of “whether to report or not,” nurses often experience considerable inner conflict. In academic terms, this “inner conflict” is referred to as decisional conflict. Decisional conflict is defined as a state of uncertainty and inner turmoil that individuals experience when choosing between two or more alternative options, unsure of which choice is optimal. This concept was first proposed by O’Connor in 1993, who also developed the Decisional Conflict Scale (DCS) to measure this construct [11]. The DCS has been extensively applied in research on patient medical decision-making, and in recent years, it has also been introduced into studies examining clinical decision-making among nursing professionals [12]. Zhao Bole et al. were the first to apply the DCS to the context of adverse event reporting among nurses [13]. In their survey of 796 nurses, they found that the incidence of decisional conflict in adverse event reporting was 34.42%, which was at a moderate level. Furthermore, gender, age, years of experience, educational background, professional title, position, work department, reporting cognition, punitive environment, departmental culture, and barriers to adverse event reporting were all identified as influencing factors of decisional conflict.

However, to date, no specialized studies have been conducted in China specifically examining decisional conflict in adverse event reporting among operating room nurses. Compared with nurses working in general wards, operating room nurses face a notably different work environment characterized by a rapid surgical pace, high occupational stress, limited direct nurse-patient communication, heightened demands for teamwork, and often more severe consequences of adverse events. Whether these distinctive features contribute to unique manifestations and influencing factors of decisional conflict in adverse event reporting

among operating room nurses remains unclear.

Therefore, the present study aims to investigate the current status of decisional conflict in adverse event reporting among operating room nurses and to analyze its influencing factors, utilizing the Decisional Conflict Scale, the Adverse Event Reporting Obstacle Scale, and a general information questionnaire. The findings are expected to provide an empirical basis for nursing managers to develop targeted intervention strategies and to improve the reporting rate of adverse events in the operating room setting.

Methods

Study Participants

A total of 310 nurses from tertiary general hospitals in Guangdong Province were selected as study participants using a convenience sampling method from June to August 2026.

Inclusion criteria were as follows: (1) holding a valid nurse practice certificate; (2) currently employed and working in the operating room; (3) having at least one year of work experience in the operating room; and (4) providing informed consent and voluntarily agreeing to participate in this study.

Exclusion criteria were as follows: (1) nurses who were on leave for further training, sick leave, or vacation during the survey period; and (2) nurses not engaged in front-line clinical work.

Instruments

General Information

A self-designed general information questionnaire was used to collect demographic and professional data, including gender, age, years of work experience, highest educational level, professional title, position, employment type, and marital status.

Decisional Conflict Scale

The Chinese version of the Decisional Conflict Scale (DCS), translated by Lu Cui et al. [12], was employed in this study. The scale consists of 16 items across three dimensions, rated on a 5-point Likert scale ranging from 1 ("strongly agree") to 5 ("strongly disagree"), with higher scores indicating greater decisional conflict. A total score exceeding 37.5 is considered indicative of the presence of decisional conflict. In this study, the Cronbach's α coefficient of the scale was 0.876, demonstrating good reliability and validity.

Questionnaire on Cognition and Attitudes toward Adverse Event Reporting among Nursing Staff

This questionnaire was adapted by Lian Min [8] from Wilson B's scale. The revised version comprises 28 items across five dimensions: reporting cognition, implementation intention,

departmental culture, punitive environment, and management expectations, with 14 positively worded and 14 negatively worded items. All items are rated on a 5-point Likert scale, and a higher total score indicates more positive cognition and attitudes toward adverse event reporting. In this study, the Cronbach's α coefficient of the questionnaire was 0.850, indicating good reliability and validity.

Adverse Event Reporting Obstacle Scale

The Adverse Event Reporting Obstacle Scale used in this study was translated and revised by Qin Chunxiang et al. [15], based on the original scale developed by Professor Anderson and his team in Denmark. The scale contains 16 items across four dimensions, rated on a 5-point Likert scale from 1 ("definitely not") to 5 ("definitely yes"), with higher scores reflecting greater perceived obstacles to reporting. In this study, the Cronbach's α coefficient of the scale was 0.833, demonstrating good reliability and validity.

Statistical Analysis

Data were collected using the Wenjuanxing platform and double entered into an Excel database after verification by two researchers. All statistical analyses were performed using SPSS version 26.0 (IBM Corp., Armonk, NY, USA). Continuous variables were presented as mean $\pm$ standard deviation ($\bar{x} \pm s$), and categorical variables were expressed as frequencies and percentages (%). Comparisons between two groups were conducted using independent samples t-tests, while comparisons among multiple groups were performed using one-way analysis of variance (ANOVA), followed by post-hoc pairwise comparisons using the least significant difference (LSD) test. Pearson correlation analysis was used to examine the relationships between scores of the different scales.

To identify independent influencing factors of decisional conflict, binary logistic regression analysis (stepwise forward selection) was performed. The dependent variable was the presence or absence of decisional conflict, defined as a standardized total score on the Decisional Conflict Scale > 37.5 (coded as 1) versus ≤ 37.5 (coded as 0). Variables that showed statistical significance in univariate analyses were entered as independent variables. The significance level was set at $\alpha = 0.05$, and a two tailed $P < 0.05$ was considered statistically significant.

Results

General Characteristics of the Participants

A total of 362 questionnaires were distributed, and 310 valid responses were collected, yielding a valid response rate of 85.6%.

The demographic and professional characteristics of the participants were as follows: the mean age was 31.60 ± 5.28 years;

the mean total years of nursing experience was 10.62 ± 5.84 years, with a mean of 6.63 ± 4.32 years of experience in the operating room; and the mean number of night shifts per month was 3.15 ± 2.00 .

In terms of sociodemographic characteristics, the majority of participants were female (73.2%), married (56.1%), and held a bachelor's degree or higher (90.3%). Regarding professional

status, most participants held the professional title of nurse or senior nurse (83.8%), were contract-based employees (79.7%), and occupied staff nurse positions (72.6%).

With respect to adverse event related experiences, 179 participants (57.7%) had experienced an adverse event in the past year, and 160 participants (51.6%) had proactively reported an adverse event. Detailed data are presented in Table 1.

Variable	Category	n	Percentage (%)
Age (years)	Continuous variable ($\bar{x} \pm s$)	—	—
Total years of nursing experience (years)	Continuous variable ($\bar{x} \pm s$)	—	—
Years of operating room experience (years)	Continuous variable ($\bar{x} \pm s$)	—	—
Night shifts per month	Continuous variable ($\bar{x} \pm s$)	—	—
Gender	Male	83	26.8
	Female	227	73.2
Marital status	Married	174	56.1
	Unmarried / single	132	42.6
	Divorced / widowed / other	4	1.3
Highest educational level	Associate degree or below	9	2.9
	Bachelor's degree	280	90.3
	Master's degree or above	21	6.8
Professional title	Nurse	43	13.9
	Senior nurse	187	60.3
	Supervisor nurse	73	23.5
	Associate chief nurse or above	7	2.3
Employment type	Permanent staff	45	14.5
	Contract-based employee	247	79.7
	Labor dispatch	18	5.8
Position	Staff nurse	225	72.6
	Team leader	78	25.2
	Head nurse	7	2.3
Experienced adverse events in the past year	Yes	179	57.7
	No	131	42.3
Proactively reported adverse events in the past year	Yes	160	51.6
	No	150	48.4

Note. Age, years of experience, and night shifts per month are continuous variables, presented as mean $\pm$ standard deviation ($\bar{x} \pm s$). All other variables are categorical variables, presented as frequencies and percentages (%).

Table 1: General Characteristics of the Participants (N = 310)

Current Status of Decisional Conflict in Adverse Event Reporting among Operating Room Nurses

Among the participants, the total score for cognition and attitudes toward adverse event reporting was 112.08 ± 15.33 , with an item mean score of 4.00 ± 0.55 . The total score for reporting obstacles was 48.76 ± 14.39 , with an item mean score of 3.05 ± 0.90 . The total score for decisional conflict was 44.13 ± 10.60 , with an item mean score of 2.76 ± 0.63 .

According to the standardized scoring of the Decisional Conflict Scale (DCS), a score > 37.5 was considered indicative of the presence of decisional conflict. Based on this criterion, the 310 operating room nurses were divided into two groups: 230 participants (74.2%) were classified as having decisional conflict, yielding an incidence rate of 74.2%, while the remaining 80 participants (25.8%) were classified as having no decisional conflict Table 2.

Scale	Scoring Method
Cognition and Attitudes Questionnaire (28 items)	Negatively worded items were reverse-scored, and the scores of all 28 items were summed. Total scores ranged from 28 to 140, with higher scores indicating better cognition and more positive attitudes.
Adverse Event Reporting Obstacle Scale (16 items)	Scores of the 16 items were summed directly. Total scores ranged from 16 to 80, with higher scores reflecting greater perceived obstacles to reporting.
Decisional Conflict Scale (DCS) (16 items)	① the raw scores of the 16 items were summed to obtain a crude score. ② Standardized transformation: $(\text{crude score} \div 16) \times 25$, yielding a standardized score ranging from 0 to 100. A standardized score > 37.5 was considered indicative of the presence of decisional conflict.

Table 2: Scoring methods of the instruments

Univariate Analysis of Decisional Conflict among Operating Room Nurses with Different Characteristics

Univariate analyses (t tests or one-way ANOVA) were conducted to examine the associations between potential influencing factors and the three dependent variables (cognition and attitudes scores, reporting obstacle scores, and decisional conflict scores). The independent variables included gender, age, marital status, highest educational level, professional title, total years of nursing experience, years of operating room experience, employment type, position, average number of night shifts per month, experience of adverse events in the past year, and proactive reporting of adverse events in the past year. The assignment of independent variables is presented in Table 3, and the results are summarized in Table 4.

The main findings were as follows:

- Factors influencing cognition and attitudes scores: Highest educational level, employment type, and experience of adverse events in the past year were significantly associated with cognition and attitudes scores ($P < 0.05$). Specifically, nurses with an associate degree or below, those with contract-based employment, and those who had not experienced adverse events in the past year reported higher scores in cognition and attitudes.

- Factors influencing reporting obstacle scores: Gender, age, professional title, total years of nursing experience, years of operating room experience, and experience of adverse events in the past year were significantly associated with reporting obstacle scores ($P < 0.05$). Greater reporting obstacles were observed among male nurses, nurses aged ≤ 25 years, those with lower professional titles (nurse), those with 11–20 years of total nursing experience, those with ≥ 1 year of operating room experience, and those who had experienced adverse events in the past year.
- Factors influencing decisional conflict scores: Gender, age, and total years of nursing experience were significantly associated with decisional conflict scores ($P < 0.05$). More pronounced decisional conflict was observed among male nurses, those aged ≤ 25 years, and those with less than 5 years or more than 20 years of total nursing experience.
- Factors with no significant influence: Marital status, position, average number of night shifts per month, and proactive reporting of adverse events in the past year showed no significant associations with any of the three dependent variables ($P > 0.05$).

Variable	Coding
Gender	Male = 1, Female = 2
Gender	Male = 1, Female = 2
Age (years)	≤ 25 = 1, 26–30 = 2, 31–35 = 3, 36–40 = 4, > 40 = 5
Marital status	Unmarried / single = 1, Married = 2, Divorced / widowed / other = 3
Highest educational level	Associate degree or below = 1, Bachelor's degree = 2, Master's degree or above = 3
Professional title	Nurse = 1, Senior nurse = 2, Supervisor nurse = 3, Associate chief nurse or above = 4
Total years of nursing experience (years)	< 5 = 1, 5–10 = 2, 11–20 = 3, > 20 = 4
Years of operating room experience (years)	< 1 = 1, 1–3 = 2, 4–5 = 3, 6–10 = 4, > 10 = 5
Employment type	Permanent staff = 1, Contract-based employee = 2, Labor dispatch = 3
Position	Staff nurse = 1, Team leader = 2, Head nurse = 3
Average number of night shifts per month	0 = 1, 1–3 = 2, 4–6 = 3, ≥ 7 = 4
Experienced adverse events in the past year	Yes = 1, No = 2

Table 3: Assignment of independent variables.

Characteristic	Category	n	Cognition and attitudes score ($\bar{x} \pm s$)	Reporting obstacle score ($\bar{x} \pm s$)	Decisional conflict score ($\bar{x} \pm s$)	Test statistic	P-value
Gender ¹	Male	83	109.58 ± 17.66	54.58 ± 14.86	46.53 ± 12.20	t ₁ = -1.581	0.116
	Female	227	112.99 ± 14.31	46.63 ± 13.64	43.25 ± 9.84	t ₂ = 4.431	<0.001
Age (years) ²	≤ 25	8	108.75 ± 17.93	59.38 ± 18.37	53.14 ± 11.40	F ₁ = 0.822	0.512
	26–30	171	112.62 ± 13.09	45.35 ± 12.71	42.79 ± 9.07	F ₂ = 6.647	<0.001
	31–35	64	113.73 ± 17.65	52.58 ± 15.46	43.91 ± 12.66	F ₃ = 3.534	0.008
	36–40	34	110.00 ± 19.67	54.79 ± 14.78	45.22 ± 13.43		
	> 40	33	109.00 ± 15.84	50.24 ± 14.56	48.17 ± 8.38		
Marital status ²	Unmarried / single	132	112.57 ± 15.74	46.81 ± 13.66	43.71 ± 8.75	F ₁ = 0.679	0.508
	Married	174	111.53 ± 15.12	50.07 ± 14.70	44.46 ± 11.89	F ₂ = 2.496	0.084
	Divorced / widowed / other	4	119.75 ± 9.39	56.25 ± 19.69	43.38 ± 8.22	F ₃ = 0.196	0.822
Highest educational level ²	Associate degree or below	9	108.33 ± 18.82	52.33 ± 15.54	47.06 ± 7.07	F ₁ = 3.328	0.037
	Bachelor's degree	280	112.78 ± 14.84	48.21 ± 14.31	44.07 ± 10.80	F ₂ = 2.211	0.111
	Master's degree or above	21	104.29 ± 18.41	54.57 ± 14.15	43.68 ± 9.25	F ₃ = 0.366	0.694

Professional title ²	Nurse	43	113.12 ± 16.01	60.35 ± 13.58	44.77 ± 14.92	F ₁ = 1.014	0.387
	Senior nurse	187	110.88 ± 15.10	46.89 ± 13.25	44.26 ± 10.18	F ₂ = 11.934	<0.001
	Supervisor nurse	73	114.36 ± 15.74	46.88 ± 14.51	43.42 ± 9.00	F ₃ = 0.170	0.916
	Associate chief nurse or above	7	113.86 ± 11.99	47.14 ± 16.97	43.97 ± 5.96		
Total years of nursing experience (years) ²	< 5	27	108.70 ± 15.19	50.93 ± 14.34	48.45 ± 14.71	F ₁ = 1.029	0.38
	5–10	178	113.19 ± 13.00	46.09 ± 13.68	42.46 ± 9.14	F ₂ = 5.566	0.001
	11–20	70	111.73 ± 20.09	53.84 ± 14.99	45.25 ± 12.35	F ₃ = 4.229	0.006
	> 20	35	109.74 ± 15.44	50.51 ± 14.07	47.02 ± 8.45		
Years of OR experience (years) ²	< 1	38	114.16 ± 12.20	39.84 ± 9.96	43.35 ± 10.06	F ₁ = 0.235	0.918
	1–3	47	111.83 ± 14.53	48.94 ± 15.89	43.09 ± 12.92	F ₂ = 4.993	0.001
	4–5	67	111.24 ± 15.50	51.48 ± 13.69	44.01 ± 8.51	F ₃ = 1.964	0.1
	6–10	74	111.77 ± 14.89	48.30 ± 13.69	42.35 ± 9.07		
	> 10	84	112.21 ± 17.38	50.94 ± 15.03	46.72 ± 11.85		
Employment type ²	Permanent staff	45	112.89 ± 15.38	51.33 ± 15.28	44.83 ± 10.79	F ₁ = 3.328	0.037
	Contract-based employee	247	112.58 ± 14.78	47.95 ± 14.02	43.74 ± 10.49	F ₂ = 2.077	0.127
	Labor dispatch	18	103.11 ± 20.08	53.44 ± 16.36	47.66 ± 11.52	F ₃ = 1.267	0.283
Position ²	Staff nurse	225	110.92 ± 15.70	48.92 ± 14.43	44.32 ± 10.60	F ₁ = 2.440	0.089
	Team leader	78	115.35 ± 14.18	48.06 ± 14.22	43.82 ± 10.81	F ₂ = 0.237	0.789
	Head nurse	7	112.71 ± 11.34	51.57 ± 16.68	41.30 ± 9.25	F ₃ = 0.317	0.729
Night shifts per month ²	0	29	111.83 ± 14.22	49.69 ± 13.94	42.30 ± 9.14	F ₁ = 0.059	0.981
	1–3	160	112.08 ± 15.33	48.23 ± 14.21	44.92 ± 10.89	F ₂ = 0.186	0.906
	4–6	100	111.87 ± 16.08	49.06 ± 14.74	43.38 ± 10.37	F ₃ = 0.748	0.524
	≥ 7	21	113.38 ± 13.96	50.10 ± 15.53	44.13 ± 11.45		
Experienced adverse events in the past year ¹	Yes	179	110.58 ± 15.81	51.87 ± 14.46	44.39 ± 11.73	t ₁ = -2.027	0.043
						t ₂ = 4.581	<0.001
	No	131	114.13 ± 14.44	44.52 ± 13.21	43.76 ± 8.86	t ₃ = 0.520	0.603
Proactively reported adverse events in the past year ¹	Yes	160	111.58 ± 16.02	49.78 ± 15.03	44.35 ± 10.38	t ₁ = -0.588	0.557
						t ₂ = 1.282	0.201
	No	150	112.61 ± 14.58	47.68 ± 13.64	43.88 ± 10.86	t ₃ = 0.391	0.696

Note. ¹ Independent-samples *t*-test was used; the test statistic column presents the *t*-values for the three dependent variables in sequence, with corresponding P-values listed in the same order. ² One-way ANOVA was used; the test statistic column presents the F-values for the three dependent variables in sequence, with corresponding P-values listed in the same order. Post-hoc comparisons were performed using Tukey's HSD test, except for the decisional conflict score across age groups, where Tukey's HSD yielded non-significant results, and thus the LSD results are reported instead. Only significant between-group differences are presented in the post-hoc comparison column. OR = operating room; SD = standard deviation.

Table 4: Univariate Analysis of Cognition, Attitudes, Reporting Obstacles, and Decisional Conflict among Operating Room Nurses (N = 310).

Correlation of Decisional Conflict with Reporting Obstacles and Cognition/Attitudes

Pearson correlation analysis (Table 5) revealed that the total score of cognition and attitudes was significantly negatively correlated with the total score of decisional conflict ($r = -0.454$, $P < 0.01$), indicating that better cognition and more positive attitudes toward adverse event reporting were associated with lower levels of decisional conflict. No significant correlation was found between the total score of cognition and attitudes and the total score of reporting obstacles ($r = -0.060$, $P > 0.05$), nor between the total score of reporting obstacles and the total score of decisional conflict ($r = 0.041$, $P > 0.05$).

These findings suggest that nurses' cognition and attitudes toward adverse event reporting are important influencing factors of decisional conflict, whereas no significant linear association was observed between reporting obstacles and either cognition/attitudes or decisional conflict.

Variable	Mean ± SD	1	2	3
1. Cognition and attitudes total score	112.08 ± 15.33	1		
2. Reporting obstacle total score	48.76 ± 14.39	-0.060	1	
3. Decisional conflict total score	44.13 ± 10.60	-0.454**	0.041	1

Note. ** $P < 0.01$ (two-tailed). Values presented are Pearson correlation coefficients (r).

Table 5: Pearson Correlation Matrix of the Scales

Multivariate Analysis

Binary logistic regression analysis was performed to identify independent influencing factors of decisional conflict. The dependent variable was the presence of decisional conflict, defined as a standardized total score on the Decisional Conflict Scale > 37.5 (coded as 1) versus ≤ 37.5 (coded as 0). Variables with $P < 0.05$ in univariate analyses were entered as independent variables. Because age, total years of nursing experience, and years of operating room experience were highly correlated with each other, only total years of nursing experience was retained in the regression model. The final model included gender, total years of nursing experience, total score of cognition and attitudes, and experience of adverse events in the past year as independent variables. The results of the binary logistic regression analysis are presented in Table 6.

The main findings were as follows:

- Using < 5 years of total nursing experience as the reference group, nurses with 5–10 years (OR = 0.136, 95% CI: 0.031–0.601, $P = 0.008$) and those with 11–20 years (OR = 0.203, 95% CI: 0.042–0.973, $P = 0.046$) of experience had significantly lower risks of decisional conflict. Although a decreasing trend was also observed in the > 20 years group (OR = 0.226, 95% CI: 0.039–1.324, $P = 0.099$), the difference did not reach statistical significance. This suggests a potential U-shaped association between years of experience and decisional conflict.
- The total score of cognition and attitudes was identified as a protective factor against decisional conflict (OR = 0.951, 95% CI: 0.931–0.972, $P < 0.001$), indicating that for each one-point increase in the cognition and attitudes score, the risk of decisional conflict decreased by approximately 5%.
- Gender (OR = 1.451, 95% CI: 0.753–2.798, $P = 0.266$) and experience of adverse events in the past year (OR = 0.827, 95% CI: 0.472–1.447, $P = 0.505$) showed no significant associations with decisional conflict.

Variable	B	Wald χ^2	P-value	OR	95% CI
Cognition and attitudes total score	-0.050	20.153	< 0.001	0.951	0.931 – 0.972
Total years of nursing experience (ref: < 5 years)		8.124	0.044		
5–10 years	-1.996	6.928	0.008	0.136	0.031 – 0.601
11–20 years	-1.594	3.978	0.046	0.203	0.042 – 0.973
> 20 years	-1.488	2.719	0.099	0.226	0.039 – 1.324
Gender (ref: Male)	0.372	1.237	0.266	1.451	0.753 – 2.798
Experienced adverse events in the past year (ref: Yes)	-0.190	0.444	0.505	0.827	0.472 – 1.447
Model fit: Hosmer-Lemeshow $\chi^2 = 10.998$, $P = 0.202$ (> 0.05 , good fit); Overall prediction accuracy = 62.9% (cut-off value = 0.75).					

Table 6: Logistic Regression Analysis of Factors Influencing Decisional Conflict in Adverse Event Reporting among Operating Room Nurses (N = 310).

Discussion

Current Status of Decisional Conflict in Adverse Event Reporting among Operating Room Nurses

In this study, the standardized total score of the Decisional Conflict Scale among 310 operating room nurses was 44.13 ± 10.60 , and the incidence of decisional conflict was 74.2%, indicating a relatively high level. This figure is considerably higher than that reported by Zhao Bole et al. [13] in their survey of 796 nurses from general hospitals, where the total decisional conflict score was 38.88 ± 6.02 and the incidence rate was 34.42%. This discrepancy may be attributable to the unique characteristics of the operating room environment. As one of the hospital departments with the highest risk levels, the operating room is characterized by a fast-paced workflow, high occupational stress, and complex technical procedures; consequently, adverse events that occur in this setting often result in more severe consequences [5,9]. Under such intense and high-pressure working conditions, operating room nurses are required not only to ensure the precision and safety of surgical assistance but also to make prompt decisions regarding whether to report an adverse event once it has occurred. This dilemma significantly exacerbates decisional conflict.

From the theoretical perspective of the Decisional Conflict Scale, O ‘Connor [11] proposed that decisional conflict arises from individuals’ uncertainty about alternative options, ambiguity regarding their own values, and concerns about the consequences of their decisions. When facing the choice of “whether to report or not,” operating room nurses are caught between two opposing concerns: on one hand, they worry about the potential negative repercussions of reporting, such as decreased departmental performance scores, criticism from supervisors, and strained collegial relationships; on the other hand, they are concerned that failing to report may violate institutional policies and create latent

safety hazards. This psychological state of being “caught between two fears” precisely reflects the core manifestation of decisional conflict. The 74.2% incidence rate observed in this study suggests that decisional conflict in adverse event reporting among operating room nurses has become a pressing issue in nursing management that warrants urgent attention.

Influencing Factors of Decisional Conflict in Adverse Event Reporting among Operating Room Nurses

Impact of Years of Experience on Decisional Conflict

Multivariate logistic regression analysis revealed that total years of nursing experience was an independent influencing factor for decisional conflict in adverse event reporting among operating room nurses (Wald $\chi^2 = 8.124$, $P = 0.044$). Specifically, using < 5 years of experience as the reference group, nurses with 5–10 years (OR = 0.136, 95% CI: 0.031–0.601, $P = 0.008$) and those with 11–20 years (OR = 0.203, 95% CI: 0.042–0.973, $P = 0.046$) of experience had significantly lower risks of decisional conflict. Although a rising trend was observed in the > 20 years group (OR = 0.226, 95% CI: 0.039–1.324, $P = 0.099$), the difference did not reach statistical significance. Overall, the risk of decisional conflict tended to decrease and then increase with increasing years of experience, exhibiting a U-shaped pattern.

This finding is generally consistent with the results of Chang Sainan’s study [9], which reported that nurses with a certain range of years of experience tended to have more positive reporting attitudes and more decisive reporting behaviors. A possible explanation is that nurses with 5–20 years of experience have accumulated relatively rich clinical experience and are more familiar with operating room workflows, institutional policies, and adverse event reporting procedures. When faced with an adverse event, they are able to quickly determine the appropriate course of action, resulting in lower decisional conflict. In contrast, nurses with less than 5 years

of experience are still in the professional adaptation phase; they are less familiar with the complex operating room environment and emergency protocols, and lack a clear expectation of the reporting process and its consequences, rendering them more susceptible to decisional conflict and uncertainty. Notably, the risk of decisional conflict among nurses with more than 20 years of experience showed a tendency to increase. This may be related to the fact that senior nurses assume greater responsibilities in the department (e.g., preceptorship, quality control) and have more concerns when reporting adverse events, such as worries about damaging the department's reputation or having their management competence questioned.

Impact of Cognition and Attitudes on Decisional Conflict

Pearson correlation analysis revealed that the total score of cognition and attitudes was significantly negatively correlated with the total score of decisional conflict ($r = -0.454$, $P < 0.01$). Logistic regression analysis further confirmed that for each one-point increase in the cognition and attitudes score, the risk of decisional conflict decreased by approximately 5% ($OR = 0.951$, 95% CI: 0.931–0.972, $P < 0.001$). This finding is consistent with the results reported by Zhao Bole et al. [13] and aligns with the theoretical framework of the Knowledge Attitude Practice (KAP) model: nurses who possess a more solid grasp of adverse event reporting related knowledge and a fuller appreciation of the significance and value of reporting tend to be more confident and decisive when facing reporting decisions, thereby experiencing lower decisional conflict.

As a core workforce in one of the highest risk hospital departments, operating room nurses' level of cognition regarding adverse event reporting directly affects the quality of patient safety management. Nevertheless, previous research [8] conducted among general hospital nurses indicated that the positive response rate for reporting cognition was only 54.60%, suggesting considerable room for improvement. The findings of this study provide nursing managers with a clear target for intervention: through systematic training on adverse event reporting to enhance nurses' reporting cognition, decisional conflict can be effectively reduced.

Impact of Gender on Decisional Conflict

Univariate analysis revealed that gender was a significant factor influencing reporting obstacles and decisional conflict among operating room nurses ($P < 0.05$). Male nurses had significantly higher scores than their female counterparts in both reporting obstacles (54.58 ± 14.86 vs. 46.63 ± 13.64) and decisional conflict (46.53 ± 12.20 vs. 43.25 ± 9.84). However, in the multivariate logistic regression, gender did not enter the final model ($P = 0.266$), suggesting that its effect on decisional conflict may be exerted indirectly through other factors, such as years of experience and

professional title.

In this study, male nurses accounted for 26.8% of the sample, which is substantially higher than the national average of approximately 3% among registered nurses in China [14]. This overrepresentation may be attributed to the physically demanding nature and high work intensity of the operating room, which tend to attract more male nurses to this setting. Male nurses in the operating room may be assigned more complex surgical assistance tasks and face greater occupational stress, potentially resulting in more pronounced decisional conflict. Nevertheless, since gender was not identified as an independent influencing factor, nursing managers should attend to the psychological support needs of male nurses while avoiding overemphasis on gender differences in their interventions.

Relationship between Reporting Obstacles and Decisional Conflict

In this study, no significant correlation was found between reporting obstacles and decisional conflict ($r = 0.041$, $P > 0.05$), which is inconsistent with our initial hypothesis. This finding differs from the study by Qin Chunxiang [15], which reported that reporting obstacles directly influence reporting behavior, but partially echoes the findings of Liu Liangying [16], who although identifying a negative correlation between reporting obstacles and reporting attitudes, also noted that safety climate, reporting management, and personal factors exerted varying degrees of influence on reporting attitudes.

Several possible explanations may account for this discrepancy. First, the item mean score of the reporting obstacle scale in this study was 3.05 ± 0.90 , indicating a moderate level of perceived obstacles among operating room nurses—present but not extreme. Second, decisional conflict among operating room nurses may be more strongly influenced by “internal psychological factors” (e.g., personal cognitive level, professional maturity) rather than “external environmental barriers” (e.g., complex procedures, fear of punishment). In other words, even in the absence of external reporting obstacles, junior nurses or those with insufficient cognition may still experience conflict due to a lack of decisional confidence. Furthermore, the reporting obstacle scale used in this study primarily measures nurses' concerns about whether reporting will “bring trouble,” whereas decisional conflict may arise more from deeper cognitive issues such as “whether reporting is meaningful” and “whether I am capable of reporting correctly.” The differences in the constructs measured by these two instruments may explain the lack of significant correlation.

These findings suggest that when nursing managers aim to reduce decisional conflict in adverse event reporting among operating room nurses, they should place greater emphasis on comprehensive

interventions that target both cognitive and behavioral dimensions, rather than focusing solely on hardware improvements such as simplifying reporting procedures.

Analysis of Other Factors

Univariate analysis revealed that factors such as highest educational level, employment type, and experience of adverse events in the past year significantly influenced cognition and attitudes scores. In contrast, position and average number of night shifts per month showed no significant associations with any of the three dependent variables ($P > 0.05$). Notably, position did not significantly influence decisional conflict, which is not entirely consistent with the findings of Chang Sainan [9], who reported that position influenced reporting attitudes. This discrepancy may be attributable to the relatively small number of head nurses in our sample (only 7 cases, accounting for 2.3%), which may have reduced the statistical power of this subgroup analysis. Future studies could consider increasing the sample size of nurses in management positions to further validate the effect of position on decisional conflict.

Recommendations

Strengthening Systematic Training for Junior Nurses

The findings of this study indicate that operating room nurses with less than five years of experience constitute a high-risk group for decisional conflict. It is recommended that nursing managers establish a tiered training system. For junior nurses, systematic training on the definition of adverse events, reporting procedures, and the significance of reporting should be prioritized. Interactive teaching methods, such as scenario-based simulation training and typical case analysis, may be incorporated to help them build confidence in reporting decisions. For nurses with 5–20 years of experience, their experiential strengths could be leveraged by involving them in departmental adverse event management. For senior nurses with more than 20 years of experience, attention should be paid to their psychological burden; measures such as rational task allocation, reduction of unnecessary administrative duties, and recognition of their professional contributions may help alleviate their concerns about reporting.

Enhancing Nurses' Cognition of Adverse Event Reporting

Cognition and attitudes were identified as protective factors against decisional conflict, suggesting that improving nurses' level of cognition regarding adverse event reporting is an effective approach to reducing decisional conflict. It is recommended that adverse event reporting training be incorporated into the routine continuing education program for operating room nurses. Through systematic and ongoing training, nurses can develop a deeper understanding of the purpose, procedures, and significance

of adverse event reporting, thereby strengthening their sense of certainty in reporting decisions and consequently reducing decisional conflict.

Attending to Nurses' Psychological Status and Decision Support

Operating room nurses work in a high stress environment over extended periods, making them more vulnerable to decisional conflict following the occurrence of adverse events. Nursing managers should establish a "safety net" mechanism for adverse event reporting. On one hand, the non-punitive reporting policy should be effectively implemented to alleviate nurses' psychological burden of fearing repercussions after reporting. On the other hand, consultation channels for adverse event reporting should be established, such as designating consultation posts or assigning senior nurses as resource persons. When staff nurses have doubts about whether to report, they can promptly obtain professional advice, thereby reducing decisional uncertainty.

Limitations of the Study

Several limitations of this study should be acknowledged. First, the cross-sectional design precludes the establishment of causal relationships among the variables, and only associations can be inferred. Second, the participants were all recruited from tertiary general hospitals in a single province (Guangdong), which limits the generalizability of the findings to other settings or populations. Third, the data were collected through self-report questionnaires, which may be subject to social desirability bias and recall bias. Future research with multi center, prospective designs and expanded sample sources, complemented by qualitative interviews to gain a deeper understanding of the psychological processes underlying decisional conflict in adverse event reporting among operating room nurses, is warranted to address these limitations.

Conclusions

- The level of decisional conflict in adverse event reporting among operating room nurses was relatively high, with a standardized total score of 44.13 ± 10.60 and an incidence rate of 74.2%, which was significantly higher than that reported among nurses in general hospitals.
- Total years of nursing experience and the level of cognition and attitudes were identified as independent influencing factors of decisional conflict in adverse event reporting among operating room nurses. Using < 5 years of experience as the reference group, nurses with 5–10 years ($OR = 0.136$) and those with 11–20 years ($OR = 0.203$) of experience had significantly lower risks of decisional conflict. For each one-point increase in the total score of cognition and attitudes, the risk of decisional conflict decreased by approximately 5% ($OR = 0.951$). Junior nurses with less than

5 years of experience were identified as a high-risk group for decisional conflict, and those with better cognition and attitudes tended to experience lower decisional conflict.

- No significant correlation was found between reporting obstacles and decisional conflict ($r = 0.041$, $P > 0.05$), suggesting that decisional conflict among operating room nurses may be more influenced by internal cognitive factors than by external environmental barriers.
- Nursing managers should pay particular attention to junior operating room nurses by enhancing their cognition of adverse event reporting through systematic training, and by establishing a tiered training system and reporting consultation support mechanisms, so as to reduce decisional conflict and improve the active reporting rate of adverse events.

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