

Determinants of Moral Courage Including the Role of Workplace Conditions, Grief Support, and Salary Among Surgical Nurses in Jiaying Tertiary Class A Hospitals: A Cross-Sectional Analysis

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Objective: This study aims to evaluate moral courage among surgical nurses and examine its association with factors such as decent work and professional grief support, to inform nursing management strategies for enhancing moral courage.

Methods: A cross-sectional study included convenience sample of 431 surgical nurses from municipal tertiary Class A hospitals, with 406 valid responses generated after exclusions. Data on demographics (gender, age) and professional characteristics (years of experience, marital status, child-bearing status, education level, professional title, administrative role, employment type, monthly income, and frequency of night shifts) was collected. Participants were required to respond to validated scales measuring moral courage, perceptions of workplace conditions, and grief support. Multiple linear regression analysis was conducted to identify factors associated with moral courage.

Results: The mean moral courage was assessed by Chinese version of the Nurses' Moral Courage Scale (NMCS) with average score of 80.04 ± 14.28 (maximum possible score = 105). Workplace conditions, grief support, and monthly salary emerged as significant associated factors, collectively explaining 42.0% of the total variance in moral courage scores ($F = 16.528$, model $p < 0.001$).

Conclusion: Surgical nurses in this study demonstrated moderate to high levels of moral courage. Key factors included workplace conditions, access to grief support systems, and monthly salary. Nursing management strategies should prioritize enhancing professional values, provide career development assistance, offering emotional support, and fostering a positive work environment to further strengthen moral courage among surgical nurses.

Keywords: decent work, grief support, moral courage, nurses, surgery

Background

Moral courage refers to the mental fortitude required to uphold ethical principles and defend moral values when confronted with moral dilemmas. Moral courage was defined as “the quality of mind and spirit that enables one to face up to ethical challenges firmly and confidently”, by Rushworth Kidder.¹ Within the nursing profession, moral courage is expressed as a psychological trait that encompasses a commitment to truth, the safeguarding of patient interests, and adherence to ethical standards.¹ Studies have demonstrated that moral courage facilitates sound decision-making and effective responses to ethical conflicts.²⁻⁴ It fosters the development of professional ethics and contributes significantly to both personal and professional growth.⁵

Surgical departments, which manage critical interventions, expose surgical nurses to patients undergoing complex procedures often associated with emotional distress and surgical trauma. This environment, characterized by a higher

frequency of clinical emergencies, places greater demands on the moral courage of surgical nurses compared with those in other departments.

Over the past two decades, the concept of decent work has gained increasing academic attention as a global initiative aimed at advancing social justice within social, political, and economic contexts.⁶ Su and Chan demonstrated that decent work, usually including fair income and social security; safe and healthy working conditions; opportunities for career development; social dialogue and rights protection, is moderately and positively associated with happiness and professional competence. However, its potential relationship with moral courage remains unclear.⁷ At the same time, professional grief—a natural emotional response to patient fatalities in clinical practice—has been found to be alleviated by adequate grief support.⁸ Despite this, the role of professional grief support in enhancing moral courage requires further investigation.

The study of moral courage among nurses in China remains in its early stages, with limited research specifically focusing on the moral courage of surgical nurses. Most existing studies on moral courage in nursing have been conducted in Western contexts, leaving a significant research gap in the Chinese healthcare system—where surgical nurses face unique challenges such as high workloads, intensive care demands, and cultural expectations of professional ethics. Additionally, the impact of “decent work” and professional grief support on moral courage has been underexplored in Chinese surgical nursing populations. This study aims to evaluate moral courage among surgical nurses and examine its association with factors such as decent work and professional grief support, to inform nursing management strategies for enhancing moral courage. Understanding these factors is crucial for improving patient care, reducing moral distress among nurses, and fostering a more ethical and supportive work environment.

Participants and Methods

Participants

This was a cross-sectional study. A convenience sampling method was used to recruit in-service surgical nurses from four municipal tertiary Class A hospitals in Jiaxing between November 2022 and February 2023. Inclusion criteria were as follows: 1) registered nurses; 2) willing to participate in the study voluntarily; 3) actively engaged in surgical nursing duties, including applying the surgical nursing process to develop preoperative, intraoperative, and postoperative nursing rehabilitation plans, as well as conducting preoperative preparations and postoperative care. Exclusion criteria were as follows: 1) interns or trainee nurses; 2) individuals on leave for training, maternity, personal matters, or illness. Of the total of 431 questionnaires distributed, questionnaires that did not meet the inclusion criteria, had obvious patterned responses, contained logical errors, or were completed in an excessively short period of time were excluded. As a result, 406 valid questionnaires were obtained, with a valid return rate of 94.2%. The distribution of respondents was as follows: 116 from the First Hospital of Jiaxing, 202 from the Second Hospital of Jiaxing, 18 from Jiaxing Maternity and Child Health Care Hospital, and 70 from Jiaxing Hospital of Traditional Chinese Medicine.

The sample size for this study was calculated using Kendall’s tau method.

$$\frac{4 \left(Z_{1-\frac{\alpha}{2}} + Z_{1-\beta} \right)^2}{9(\tau - \tau_0)^2}$$

where τ is the expected Kendall’s tau value, with values between 0.1 and 0.3 considered small effects and values between 0.3 and 0.5 considered medium effects; τ_0 is the tau value under the null hypothesis, usually set at 0; α is the significance level, typically set at 0.05; $1 - \beta$ is the power of the test, with β usually set at 0.8; Z is the standard normal quantile. To be on the safe side, τ was set at 0.1 in this study, and other values were chosen based on common practice. Additionally, considering a 15% dropout rate, the sample size needed to be at least 400 cases.

Survey Tools

General Information Questionnaire

A questionnaire developed by the researchers collected demographic and professional data from participants on gender, age, years of professional experience, marital status, child-bearing status, education level, professional title, administrative role, employment type, monthly income, and frequency of night shifts.

Nurses' Moral Courage Scale (NMCS)

The Chinese version of the Nurses' Moral Courage Scale (NMCS), adapted by Numminen et al and translated by Wang et al, was used to assess the moral courage of clinical surgical nurses.^{9,10} The scale demonstrates a Cronbach's α of 0.956. The NMCS comprises 21 items across four domains: moral integrity (7 items), commitment to good care (5 items), compassion and true presence (5 items), and moral responsibility (4 items). Responses are recorded on a 5-point scale, ranging from 1 (does not describe me at all) to 5 (describes me very well), resulting in a total score between 21 and 105. Higher scores indicate greater levels of moral courage. Authorization for the use of the scale was obtained.

Decent Work Scale

The Decent Work Scale, developed by Duffy et al (2017), was used to assess surgical nurses' perceptions of the decency of their professional environment.¹¹ The scale demonstrates a Cronbach's α coefficient of 0.897 and includes five dimensions: physical and interpersonal safety in the work environment, access to healthcare, adequate compensation, free time and rest, and organizational values complementary family and societal values. The scale includes a total of 15 items. A 7-point was employed for responses, ranging from 1 ("strongly disagree") to 7 ("strongly agree"). Items 7, 8, 10, and 11 require reverse scoring, resulting in a maximum score of 75. Higher scores indicate more favorable perceptions of decent work.

Professional Grief Support Scale for Nurses

The Professional Grief Support Scale for Nurses, developed by Zhang et al, was used to assess the professional grief support experienced by surgical nurses.¹² The scale demonstrates high internal consistency, with a Cronbach's α coefficient of 0.964. It comprises five dimensions: support from colleagues, leaders, family, friends, and work units, with a total of 27 items. A 5-point scale was employed, with scores ranging from 1 to 5, where 1 indicated "strongly disagree" and 5 represented "strongly agree." Higher scores indicate a greater perception of professional grief support.

Survey Methods

This study employed a questionnaire survey. Upon obtaining approval from the nursing departments of each participating municipal tertiary Class A hospital, an electronic questionnaire was distributed via WeChat using a QR code. The questionnaire's homepage outlined the study's objectives, content, confidentiality protocol, and instructions for completion. Participants were eligible to complete the survey if they met the predefined inclusion criteria outlined in the study protocol. Of the 431 responses collected, 25 were excluded due to issues such as uniform response patterns, logical inconsistencies, or completion in an unrealistically short time. After these exclusions, 406 valid responses were retained, resulting in an effective response rate of 94.2%.

Statistical Methods

Data analysis was conducted using SPSS 26.0. Descriptive statistics were initially applied to summarize the sample characteristics, with quantitative data presented as means and standard deviations. Pearson's correlation analysis was used to examine the associations between moral courage and variables such as work decisiveness, decent work, and grief support. To assess the impact of individual variables on moral courage, the variables were stratified into groups, and group differences were analyzed. Specifically, an independent sample *t*-test was employed to compare two groups, while one-way analysis of variance (ANOVA) was used for variables with more than two groups. A multivariate linear regression model was subsequently applied to explore the relationship between moral courage and its associated factors due to its suitability for analyzing continuous dependent variables (moral courage scores) and identifying linear relationships with independent variables. No missing data were found in the questionnaires that were collected in this study. A significance threshold of $p < 0.05$ was set to determine statistical significance for all analyses.

Results

General Information

Of 406 surgical nurses participating in the survey, the largest age group was 31–35 years (27.1%), and there were 18 males (4.4%) and 388 females (95.6%) (Table 1). Most respondents were married (64.3%) and had one or more children

Table 1 Sample Distribution

Variable	Category	Frequency	Percentage	Variable	Category	Frequency	Percentage
Age	≤25	95	23.4	Professional title	Nurse	90	22.2
	26–30	87	21.4		Senior nurse	150	36.9
	31–35	110	27.1		Head nurse	147	36.2
	36–40	69	17.0		Deputy chief nurse	18	4.4
	>40	45	11.1		Chief nurse	1	0.2
Sex	Male	18	4.4	Administrative role	None	323	79.6
	Female	388	95.6		Nursing team leader	47	11.6
Marital status	Unmarried	136	33.5		Head nurse	35	8.6
	Married	261	64.3		Director of nursing	1	0.2
Child-bearing status	Divorced	9	2.2		Employment type	Staff	147
	No children	159	39.2	Non-staff		259	63.8
	Have one child	174	42.9	Night shift frequency/month	≤4	230	56.7
Have two or more children	73	18.0	5–10		160	39.4	
Educational level	College diploma or lower	72	17.7		>10	16	3.9
	Bachelor's degree	329	81.0	Monthly salary	≤5000	96	23.6
	Master's degree or above	5	1.2		5001–8000	258	63.5
Years of working	<1	29	7.1		8001–11,000	44	10.8
	1–5	107	26.4		>11,000	8	2.0
	6–10	81	20.0				
	11–15	105	25.9				
	16–20	50	12.3				
	>20	34	8.4				

Note: Percentages may not sum to 100% due to rounding.

(60.8%). In terms of educational attainment, 72 participants (17.7%) held a college diploma or lower, while 334 participants (82.3%) had earned at least a bachelor's degree. Most respondents (91.6%) had more than 1 year of professional experience. 90 participants (22.2%) were nurses, 150 participants (36.9%) were senior nurses, 147 participants (36.2%) were head nurses, 18 participants (4.4%) were deputy chief nurses, and 1 participant (0.2%) was a chief nurse. Administrative roles were held by 47 participants (11.6%) as nursing team leaders, 35 participants (8.6%) as head nurses, and 1 participant (0.2%) as a director of nursing, while 323 participants (79.6%) did not hold an administrative position.

Contractual employment (non-staff) was reported by 259 participants (63.8%). In terms of monthly night shifts, 230 participants (56.7%) reported working 4 or fewer shifts, 160 participants (39.4%) worked between 5 and 10 shifts, and 16 participants (3.9%) worked more than 10 shifts. Monthly salary distributions indicated that 96 participants (23.6%) earned no more than RMB 5000, 258 participants (63.5%) earned between RMB 5001 and RMB 8000, and 52 participants (12.8%) earned more than RMB 8000.

Moral Courage, Professional Grief Support, and Decent Work Scores Among the Surgical Nurses

The mean scores for moral courage, decent work, and professional grief support in this cohort were 80.04 ± 14.28 , 48.87 ± 8.30 , and 106.00 ± 16.53 (maximum possible scores of 105, 75, 135), respectively (Table 2). These scores indicate that the surgical nurses in this study demonstrated good levels of moral courage, as well as high levels of decent work and professional grief support.

Table 2 Moral Courage, Decent Work, and Grief Support Scores (N = 406, $\bar{X}(S)$)

Dimension	Item Number	Score Range	Total Score	Mean Item Score
Moral courage	21	21~105	80.04(14.28)	3.81(0.68)
Moral integrity	7	7~35	27.12(4.7)	3.82(0.73)
Moral responsibility	4	4~20	15.28(2.92)	3.87(0.72)
Compassion and true presence	5	5~25	19.34(3.62)	3.66(0.77)
Commitment to good care	5	5~25	18.29(3.85)	3.87(0.67)
Decent work	15	15~75	48.87(8.3)	3.26(0.55)
Safety and health	6	6~30	20.36(4.12)	3.39(0.69)
Adequate compensation	3	3~15	9.48(2.27)	3.16(0.76)
Free time	3	3~15	8.52(2.18)	2.84(0.73)
Values	3	3~15	10.51(2.36)	3.5(0.79)
Grief support	27	27~135	106(16.53)	3.93(0.61)
Colleagues	8	8~40	30.68(5.34)	3.83(0.67)
Leaders	8	8~40	31.2(5.73)	3.9(0.72)
Family	4	4~20	16.43(2.95)	4.11(0.74)
Friends	4	4~20	16.68(2.76)	4.17(0.69)
Unit	3	3~15	11.01(2.63)	3.67(0.88)

Note: The data in brackets are standard deviations.

Pearson's Correlation Analysis of Moral Courage, Decent Work, and Professional Grief Support Among Surgical Nurses

Pearson correlation analysis indicated a significant positive correlation between the total moral courage score and the total decent work score (Pearson's $r = 0.449$, $p < 0.01$). Furthermore, a strong positive correlation was observed between the total moral courage score and the total professional grief support score (Pearson's $r = 0.615$, $p < 0.01$) (Table 3). These findings suggest that decent work and professional grief support have a positive impact on moral courage. A supportive work environment and adequate emotional support can enhance nurses' moral courage.

Comparison of Moral Courage Scores Across Surgical Nurses with Varying Demographics

Comparison of total moral courage scores showed no significant differences between (up to 40 vs >40 years) and between night shift frequency groups (up to 4 vs >4 per month) ($p > 0.05$). However, significant differences in moral courage scores were observed based on marital status, child-bearing status, educational level, administrative role, professional title, and monthly salary ($p < 0.05$) (Table 4). These results suggest that these factors may have a significant impact on moral courage. For example, married nurses and those with children may exhibit higher levels of moral courage, possibly due to the experience and sense of responsibility they have accumulated in their work and life.

Table 3 Correlation Analysis Among Moral Courage, Decent Work and Grief Support (n = 406, r)

Item	Moral Courage	Moral Integrity	Moral Responsibility	Compassion and True Presence	Commitment to Good Care
Decent work	0.449**	0.427**	0.406**	0.455**	0.408**
Grief support for nurses	0.615**	0.605**	0.558**	0.604**	0.549**
Colleague support	0.530**	0.520**	0.488**	0.522**	0.470**
Leader support	0.546**	0.533**	0.489**	0.539**	0.495**
Family support	0.512**	0.520**	0.480**	0.502**	0.429**
Friend support	0.538**	0.548**	0.489**	0.529**	0.456**
Unit support	0.458**	0.428**	0.400**	0.440**	0.458**

Note: **indicates $P < 0.01$.

Table 4 Comparison of Total Moral Courage Scores Among Nurses with Different Characteristics

Item	N	Scoring Rate of Moral Courage	Statistics	P
Marital status			T=3.691	<0.001
Unmarried	136	0.728(0.129)		
Married	261	0.780(0.133)		
Child-bearing status			T=3.738	<0.001
No children	159	0.732(0.128)		
Have children	247	0.782(0.138)		
Age			T=1.253	0.211
≤40	361	0.759(0.132)		
>40	45	0.786(0.162)		
Education level			T=2.631	0.003
College diploma or lower	72	0.724(0.133)		
Bachelor's degree or above	334	0.770(0.135)		
Administrative role			T=3.844	<0.001
No	323	0.749(0.136)		
Yes	83	0.813(0.125)		
Frequency of night shifts/month			T=0.108	0.914
≤4	230	0.763(0.136)		
>5	176	0.761(0.136)		
Professional title			F=7.143	0.001
Nurse	90	0.716(0.133)		
Senior nurse	150	0.766(0.137)		
Head nurse	147	0.783(0.127)		
Monthly salary			F=6.640	0.001
≤5000	96	0.724(0.138)		
5001–8000	258	0.768(0.136)		
>8000	52	0.805(0.119)		

Note: The data in brackets are standard deviations. "Marital status" and "Professional title" denominator numbers do not add to 406.

Multiple Linear Regression Analysis of Factors Influencing Moral Courage in Surgical Nurses

In a multiple linear regression analysis with the total moral courage score as the dependent variable and statistically significant variables from the bivariable and correlation analyses as independent variables, and moral courage was significantly associated with decent work, grief support, and monthly salary in this cohort (model $p < 0.001$), accounting for 42.0% of the variance (Table 5). These findings further confirm the important role of decent work and professional

Table 5 Multivariate Linear Regression Analysis of Factors Affecting Moral Courage Among Surgical Nurses (N = 406)

Item	B	SE	Beta	t	P
Constants	0.233	0.065		3.613	<0.001
Decent work	0.173	0.067	0.140	2.558	0.011
Grief support	0.585	0.055	0.526	10.710	<0.001
Marriage (married = 1)	0.009	0.044	0.032	0.209	0.835
Educational level (bachelor's degree or above = 1)	0.174	0.068	0.171	2.566	0.011
Income (control group: low income ≤ RMB 5000)					
5000–8000	0.085	0.041	0.110	2.082	0.038
>8000	0.113	0.061	0.123	1.847	0.065

Note: Moral courage, decent work, and grief support were all recorded as score rates.

grief support in enhancing moral courage and also highlight the positive impact of reasonable compensation on nurses' job satisfaction and moral courage.

Discussion

Moral Courage of Surgical Nurses

This study comprehensively examined several key variables influencing moral courage among surgical nurses, including workplace conditions, grief support, monthly salary, and decent work. The findings revealed that these factors collectively explained a significant portion of the variance in moral courage scores, highlighting their importance in shaping the moral courage of surgical nurses. In this study, the total moral courage score for surgical nurses was 80.04 ± 14.28 , with an average item score of 3.81 ± 0.68 , indicating a mid-to-upper range level of moral courage. These results are consistent with the findings reported by Numminen et al.⁹ Similarly, Fidan et al observed a total moral courage score of 80.29 ± 13.16 in their study of intensive care unit nurses, which aligns with the present findings.¹³ In their study, higher moral courage among intensive care unit nurses was linked to increased levels of compassion and empathy, alongside a decrease in egocentric behavior.

Among the four dimensions of moral courage assessed in surgical nurses, the dimension of moral integrity received the highest score (27.12 ± 4.70), indicating a strong commitment to ethical standards and professional conduct. Nurses demonstrating high moral integrity exhibit elevated moral courage and superior professional competence, which are critical for ensuring high-quality nursing care, patient safety, and improved quality of life. Previous study demonstrated that there was a strong positive significant relationship between professional competency and moral courage among staff nurses.¹⁴ The relatively high moral courage observed in this cohort may be attributed to the concurrent improvement in nursing practices, which has advanced both professional standards and ethical expectations. The influence of medical ethics on nurses' attitudes and behaviors has been an increasing focus in recent research.¹⁵ A cross-sectional study in China showed that work experience; income; hospital organization ethics training; active acquisition of ethics knowledge; nursing was career goal; frequency of facing situations that require moral courage at work were significantly associated with moral courage in univariate analysis.¹⁶ With the advancement of nursing ethics education, nurses' have developed better capabilities to navigate ethical dilemmas, thereby leading to improved moral courage. Studies suggest that as years of practice, clinical experience, and familiarity with the healthcare management environment increase, surgical nurses' awareness of professional ethics continues to expand. Additionally, the role-model effect from ethically exemplary surgical nurses further amplifies the moral courage of their peers.¹⁷

Determinants of Surgical Nurses' Moral Courage

Decent Work

This study found that decent work was associated significantly with the moral courage of surgical nurses ($B = 0.173 > 0$, $p = 0.011 < 0.05$). The total score for decent work among surgical nurses was 48.87 ± 8.30 , with an item-specific mean of 3.26 ± 0.55 , indicating a moderate-to-high level on the 7-point scale. A stronger perception of having decent work was positively correlated with higher moral courage. The safety and health dimension received the highest scores, suggesting that the hospital environment and medical security were perceived as satisfactory. This result may be attributed to the hospital's provision of a safe working environment, both physically and psychologically, along with comprehensive health support for nurses, which positively influenced their moral courage.¹⁸ In contrast, dimensions such as adequate salary, free time, and values received lower scores, indicating that these aspects of their work were insufficient. This could be attributed to the link between salary and factors such as years of service and professional title under the current DRGs payment system, coupled with a high workload, substantial work-related stress, and a disproportionate input-output balance, such as employees work overtime for extended periods (high input), with limited improvement in performance (low output).¹⁹ Moreover, the demands of shift work, along with continuous professional training and evaluation, contribute to strain. Emphasizing professional ethics and values may bolster nurses' confidence, which means that nurses have a stronger sense of professional responsibility and provide the best possible care for patients, thereby mitigating burnout and workload pressures. The reason may be that the hospital provides a better working environment in

terms of hardware facilities, providing physical and psychological safety for surgical nurses, and the hospital itself, as a medical institution, can provide sufficient physical and mental health support for surgical nurses, which will positively affect the performance of their moral courage. Nursing managers should focus on fostering professional values and supporting career development to enhance moral courage among surgical nurses.

Grief Support

Grief support was associated significantly with the moral courage of surgical nurses ($B = 0.585 > 0, p < 0.001$). The total grief support score for surgical nurses in this cohort was 106.00 ± 16.53 , with an average item score of 3.93 ± 0.61 . Higher levels of professional grief support were positively correlated with enhanced moral courage. The reason may be that colleagues and leaders can actively find out, listen, care and comfort the nurses who are in sorrow, and be willing to discuss the feelings of the patient's death together, so as to intervene as soon as possible and keep the nurses in a good psychological state.

Among the various dimensions of grief support, colleague and leadership support received the highest scores, suggesting that surgical nurses experienced stronger support from colleagues and leaders following patient fatalities in clinical settings. Colleagues and leaders actively engage by offering emotional listening, care, reassurance, initiating timely interventions, and providing platforms for discussing feelings related to patient fatalities, thereby supporting nurses' mental well-being. Colleague support has been demonstrated to alleviate work-related stress and psychological burdens, thus improving mental health and moral courage.

In contrast, the unit support dimension received the lowest scores, indicating that surgical nurses perceived insufficient support from their units following patient fatality. This could reflect a lack of designated emotional outlets, psychological counseling services or hotlines, and opportunities for post-mortem discussions within the unit. Managers should consider increasing the availability of psychological counseling services through relevant institutions or hotlines and implementing fatality education and hospice care training programs.²⁰ Regular psychological decompression sessions for nurses should be organized, incorporating professional counselors and providing opportunities for nurses to express their emotional responses following patient fatalities. The solution-focused approach can be employed, when necessary, to support nurses' mental health.²¹ This approach helps reinforce the unit's commitment to humanistic care. The study also revealed low support scores from family and friends, which may stem from nurses' psychological factors, concerns about family distress, or privacy issues related to patient care, leading to reluctance in sharing professional grief. Increasing care and understanding from family members and friends, alongside active communication about the nursing profession, can enhance nurses' sense of identity and belonging, ultimately contributing to greater moral courage.

Monthly Salary

Monthly salary was associated significantly with the moral courage of surgical nurses ($p < 0.05$), with higher salaries being positively correlated with higher moral courage levels. Nurses earning more than RMB 8,000 monthly exhibited the highest moral courage scores, suggesting that higher salaries reflect the value of labor, enhance psychological well-being, and indicate recognition of professional value. The higher salary can reflect the labor value of nurses and make them feel that their professional value has been realized psychologically. Moreover, the incentive effect of monthly salary is a way for nurses to gain recognition and satisfaction psychologically. Salary serves as a key motivator, offering psychological validation and improving job satisfaction. In contrast, surgical nurses earning less than RMB 5,000 demonstrated lower moral courage. This group predominantly comprises younger nurses, who generally have less experience and hold lower professional titles. Since salary is typically linked to years of service and professional title, this discrepancy may contribute to their lower moral courage. To address this, nursing managers should prioritize the professional growth of younger nurses, consider adjusting their compensation, and offer targeted support to improve their engagement and moral courage.

This study provides insights into moral courage among surgical nurses in Jiaying, but limitations exist. The convenience sample may not represent broader populations, and the cross-sectional design restricts causal inferences. Focusing on a single city limits generalizability. Self-reported data may introduce biases, and the instruments used may not fully capture all relevant constructs. The lack of a meta-regression or mediation analysis leaves room for further inquiry into the mechanisms driving these relationships. Future research should employ

more rigorous sampling, longitudinal designs, and objective measures to address these limitations and enhance the robustness and generalizability of findings on moral courage in surgical nurses.

Conclusion

This study evaluated the moral courage of surgical nurses, identifying it at an upper-middle level. Factors such as decent work, grief support, and monthly salary were found to be significantly influence moral courage. These factors provide a foundation for nursing managers to implement targeted interventions aimed at enhancing the professional moral courage of nursing staff.

To strengthen moral courage, nursing managers should prioritize workplace safety and well-being, providing competitive compensation, offering comprehensive grief support, and fostering a strong culture of professional ethics and positive perspectives on life.

However, the study was limited to surgical nurses in Jiaxing municipal tertiary Class A hospitals, which may restrict the generalizability of the findings. Future research about the factors influencing nurses' moral courage should address this limitation by using a larger and more diverse sample in various contexts.

Abbreviations

NMCS, Nurses' Moral Courage Scale; ANOVA, one-way analysis of variance.

Data Sharing Statement

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Ethics Approval and Consent to Participate

This study was conducted with approval from the Ethics Committee of the Second Affiliated Hospital of Jiaxing University (No.2022ZFYJ229-01). This study was conducted in accordance with the declaration of Helsinki. Written informed consent was obtained from all participants.

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Disclosure

The authors declare that they have no competing interests in this work.

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