

## ORIGINAL RESEARCH

# The Effectiveness of the Educational Model Based on "Moral and Medical Integration" in the Nursing Students' Education in the Operating Theatre

Li Xiao, MM; Zhiqiang Chen, MM; Ye Gu, MM; Feng Duan, MD

### ABSTRACT

**Objective** • As the reform of China's medical and healthcare system progresses and the demand for medical and healthcare services increases, the humanistic quality of medical personnel has received more attention and concern. The humanistic quality of medicine for medical staff is specifically translated into the ethics of nursing for nursing staff. In this study, we explored the effectiveness of the education model based on "moral and medical integration" in the nursing students' education in the operating room.

**Methods** • The "moral and medical integration" education model was implemented in The Affiliated Changzhou No. 2 People's Hospital since September 1, 2021, and 50 nursing students who received the traditional education model before the implementation from May 1, 2021, to August 31, 2021, were selected as the control group. The study group was composed of 50 nursing trainees who received the traditional education model from 1 September 2021 to 30 November 2021 and 50 nursing trainees who received the education model based on the "integration of

moral and medical science". The nursing theory and nursing skills scores, professional nursing practice scores, moral courage scores, and satisfaction with teaching were compared between the two groups.

**Results** • The nursing theory scores ( $t = 14.36, P < .001$ ), nursing skills scores ( $t = 11.27, P < .001$ ), and teaching satisfaction of the study group ( $t = 4.76, P < .029$ ) were all higher than those of the control group. After the education, all the professional nursing practice ability scores ( $t = 9.16, P < .001; t = 12.24, P < .001; t = 10.42, P < .001; t = 10.95, P < .001$ ) and moral courage scores ( $t = 7.81, P < .001; t = 11.76, P < .001; t = 15.11, P < .001; t = 12.24, P < .001$ ) of the study group were higher than those of the control group ( $P < .05$ ).

**Conclusion** • The education model based on "moral and medical integration" can help improve the professional nursing level of nursing students in the operating theatre. (*Altern Ther Health Med.* 2024;30(10):114-118).

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### INTRODUCTION

Surgery is one of the important aspects of healthcare delivery and the ultimate treatment option for diseases that require it. For surgical procedures, the operating room is the basis for ensuring that the surgical procedures are performed properly. Therefore, it is important to improve the conditions in the operating room, including the professionalism of operating room nurses.<sup>1</sup>

As the reform of China's medical and healthcare system progresses and the demand for medical and healthcare services

increases, the humanistic quality of medical personnel has received increasing attention and concern. While nursing is an important part of the overall medical and healthcare work, it is distinctly different from other clinical work and has relative independence and specificity. As early as the Middle Ages, medicine combined medicine and nursing into one, and nursing measures were integrated into the theory of diagnosis and treatment of diseases.<sup>2</sup> Traditional Chinese medicine also emphasizes that the treatment of illnesses requires "three parts treatment and seven parts nourishment", which also illustrates the importance of nursing. The humanistic quality of medicine for medical staff is specifically translated into the ethics of nursing for nursing staff.

The core of nursing ethics is "altruism", "helping others" and "selfless dedication", which is the spiritual motivation and ideological basis for nursing staff to engage in all nursing work.<sup>3</sup> Whether the nursing work can be carried out correctly and whether the quality of nursing can be ensured depends to a large extent on the nursing moral level of the nursing

staff. Only with a high level of nursing ethics will nursing staff do their best to serve their patients and gain their affirmation of the quality of their nursing work, thus contributing to the best possible outcome of the disease. Nursing ethics is one of the essential qualities required of modern nurses and is an important part of the teaching of the nursing profession. Relevant reports have confirmed the important role of nursing professional ethics education,<sup>4</sup> nursing humanities education, and other education related to nurses' ethics in nursing professional education, but a more systematic education model or education system has not yet been formed. On this basis, The Affiliated Changzhou No. 2 People's Hospital has innovatively proposed an educational model based on the "integration of ethics and medicine", which advocates that in the process of professional teaching for nursing students, emphasis should be placed on the cultivation of students' nursing ethics, insisting on the practical approach, cultivating and improving students' nursing ethics in practice, and strengthening students' concept of nursing ethics.

As surgical treatment ideas and concepts are constantly updated, the trend towards specialization in the operating theatre is evident, and the volume of surgery has increased significantly, requiring higher and higher professional and moral qualities for operating theatre nursing staff. At the same time, the working environment of the operating room is relatively closed, and work processes and specialist theories are self-contained, making the training period long; at present, there is no independent education curriculum for operating room nursing in China, and education on theories and skills related to operating room nursing is integrated into the basic nursing and surgical nursing courses, with little content.<sup>5,6</sup>

Therefore, this study applies the education model based on the "integration of ethics and medicine" to the education of nursing students in the operating theatre and advocates that in the process of teaching nursing students in the operating theatre, emphasis should be placed on the cultivation of students' nursing ethics, in the hope of providing effective and feasible references for the nursing ethics education of nursing students in the operating theatre.

## METHODS

### Experimental preparation

The "moral and medical integration" education model was implemented in The Affiliated Changzhou No. 2 People's Hospital since September 1, 2021, 50 nursing interns who received the traditional education model before the implementation from 1 May 2021 to 31 August 2021 were selected as the control group, and 50 nursing interns who received the education model after the implementation from 1 September 2021 to 30 November 2021 were selected as the study group. The study group was composed of nursing interns who received an education model based on the "integration of ethics and medicine". All nursing students were graduate trainees and gave their informed consent to participate in the study.

### Inclusion and exclusion criteria

**Inclusion criteria:** a first-time internship in the operating theatre; the duration of the internship is one month.

**Exclusion criteria:** Persons with mental illness. Unable to participate in the full clinical practice.

### Methods of care

**Control group:** Teaching is conducted according to the traditional education method, and the main content is the normal classroom teaching by the instructor to the nursing students according to the teaching schedule set by the school. The main content of classroom teaching is specialized knowledge of nursing.

**Research Group:** integrating the research and practice of Nursing Ethics education into the teaching and learning process. The research and practice of nursing education is integrated into the teaching and learning process through the following aspects: (1) Organizing nursing students to give lectures and presentations on the topic of nursing education, and holding various activities such as nursing knowledge competitions and speech contests. (2) In conjunction with the research and practice on the topic of "nursing ethics education", nursing students are organized to go to homes for the elderly, communities, and enterprises to carry out public welfare activities such as prevention and treatment of diseases, charity consultations, and condolences, to cultivate nursing students' professional ethical feelings, improve their knowledge of professional ethics and their ability to educate themselves, and firmly establish the socialist concept of honor and shame. (3) Establish a website for nursing ethics education and give full play to the function of online education. The nursing ethics education website has columns for medical ethics, advanced figures, and medical ethics cases. This will enable nursing students to improve their ideological and moral quality, develop their personality, exercise their abilities, bring their strengths into play, and promote their all-round development. (4) Every week, the supervising teacher conducts a seminar where nursing students can freely communicate with each other so that they can ask questions to solve their problems and enhance their mutual feelings, it is also convenient for the supervising teacher to understand the recent situation of nursing students.

**Bias control method:** The study group lead teachers were the same group of teachers as the control group lead teachers. The impact of the time difference on the study was negligible. Before the study was conducted, the teachers were given uniform training on the teaching style and content of the lectures.

### Observation indicators

Nursing theory and nursing skill performance: nursing theory assessment and nursing skill assessment were conducted for both groups of nursing students after the internship. The theoretical assessment was conducted in the form of a written test, while the nursing skills assessment was conducted by the nursing students on the spot, and the

supervising teacher scored the nursing students according to their operation. The total score of both assessments was 100 points, and the higher the score, the better the nursing student's performance.

**Scoring of professional nursing practice ability:** the scale was used before and after teaching to assess professional nursing practice ability. The scale consisted of 30 items in four dimensions: grasping professional role behavior (10 items), advocating patient role behavior (8 items), independent decision-making behavior (7 items), and nursing innovation behavior (5 items). The higher the score, the higher the level of professional nursing practice behavior.

**Moral courage score:** The nurse's moral courage scale was used before and after teaching. The scale includes a total of 21 entries in 4 latitudes: ethics (7 entries), commitment to good patient care (5 entries), compassion and genuine presence with patients (5 entries), and moral responsibility (4 entries), each entry is rated on a 5-point scale of 1 to 5, with a total score of 21 to 105. The higher the score, the higher the moral courage.

**Satisfaction with teaching:** The quality of teaching was assessed using a satisfaction scale developed by the college, with a total score of 0-100, a total score of >90 being very satisfied, a total score of 70-90 being satisfied, and a total score of <70 being unsatisfied. Satisfaction scores were very satisfied and satisfied as a percentage of the number of cases. Satisfaction = (very satisfied + satisfied)/total number of cases×100%.

## Statistical processing

The analysis software was SPSS version 21.0 and the plotting software was GraphPad Prism version 9.0. Count data were expressed as [n(%)] and compared using the chi-square test; measurement and other data were expressed as ( $\bar{x} \pm s$ ) and compared using the *t* test. Differences are indicated as statistically significant at  $P < .05$ .

## RESULTS

### Basic information

The differences were not statistically significant ( $P > .05$ , Table 1) when comparing the basic information such as age and gender collected from the two groups of nursing students.

### Nursing theory and nursing skills results

The nursing theory and nursing skills scores of the study group were higher than those of the control group ( $P < .05$ , Figure 1A-B).

### Professional nursing practice competency scores

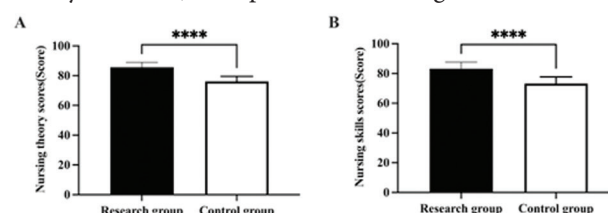
Before education, there was no significant difference between the two groups in all professional nursing practice competency scores ( $P > .05$ ). After education, all professional nursing practice competency scores increased in both groups, with the study group being higher than the control group ( $P < .05$ , Figure 2A-D).

**Table 1.** Basic information about the two groups of nurses

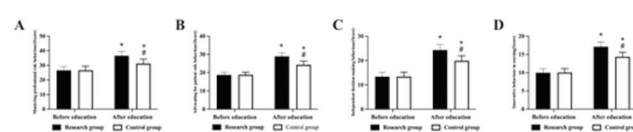
Group	n	M/F	Age(year)	Academic qualifications	
				Specialist qualifications	Bachelor's degree and above
Research Group	50	3 (6.00)/47 (94.00)	25.48±1.24	16 (32.00)	34 (68.00)
Control Group	50	3 (6.00)/47 (94.00)	25.51±1.21	18 (36.00)	32 (64.00)
$\chi^2$ or <i>t</i>	-	0.000	0.122	0.178	
<i>P</i> value	-	1.000	.903	.673	

Abbreviations: M, Male; F, Female.

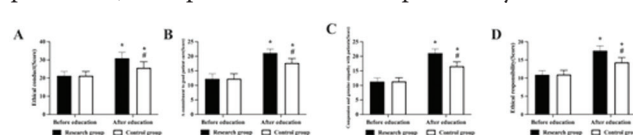
**Figure 1.** Comparison of nursing theory and nursing skill scores between the two groups. A) Comparison of nursing theory scores. B) Comparison of nursing skill scores.



**Figure 2.** Comparison of professional nursing practice competency scores between the two groups. A) Comparison of professional role behaviors. B) Comparison of patient advocacy role behaviors. C) Comparison of independent decision-making behaviors. D) Comparison of nursing innovation behaviors.



**Figure 3.** Comparison of moral courage scores between the two groups. A) Comparison of ethical conduct. B) Comparison of commitment to good patient care. C) Comparison of compassion and genuine presence with the patient. D) Comparison of moral responsibility.



**Table 2.** Teaching satisfaction in both groups [n(%)]

Group	n	Very satisfied	Satisfied	Not satisfied	Satisfaction
Research Group	50	26 (52.00)	20 (40.00)	4 (8.00)	46 (92.00)
Control Group	50	20 (40.00)	18 (36.00)	12 (24.00)	38 (76.00)
$\chi^2$	-	-	-	-	4.762
<i>P</i> value	-	-	-	-	.029

### Moral courage score

Before education, there was no significant difference between the two groups in all moral courage scores ( $P > .05$ ). After education, all moral courage scores increased in both groups, with the study group being higher than the control group ( $P < .05$ , Figure 3A-D).

### Teaching satisfaction

Satisfaction with teaching was higher in the study group than in the control group ( $P < .05$ , Table 2).

## DISCUSSION

With the development of society and the transformation of the medical care model, the scope of nurses' duties is no longer limited to the therapeutic care of dispensing drugs and injections as a doctor's assistant but has been extended to the overall responsibility of promoting health, preventing diseases and assisting in rehabilitation, which has put forward higher requirements for nurses' medical ethical qualities, medical ethical emotions, and medical ethical obligations.<sup>7,8</sup> Especially in a fully enclosed, all-round, high-quality fine nursing environment such as the operating theatre, the operations lack supervision and intervention from the outside world and the patient, if there is no good nursing ethics, on one hand, the work shows a lack of initiative, after completing the required workload, there is nothing to do and no concern; on the other hand, there is an indifferent mentality: no one knows even if it is sloppy, it will delay the rescue time and lead to infection. The problem is that the patient's care will be delayed, leading to infections, adverse events such as dislodgement of important ventilator tubes and even medical errors. Good nursing ethics will make nurses in the operating theatre aware of the importance of each nursing operation to the patient and put the patient's interests first so that they can do their nursing work in a "precise", "fine" and "accurate" manner. "In addition to doing a good job with the established workload, the nursing work will be developed to a deeper level, which will guarantee the quality of nursing care while strengthening the patient's sense of nursing experience and facilitating the smooth running of the operation."<sup>9</sup>

The student population of nursing students in China is relatively complex, with varying levels of education and different purposes of study. Some students lack a correct understanding of the nursing profession and place too much emphasis on the professionalism and skills of nursing work, believing that it is sufficient to learn only the theoretical and operational skills of nursing and that the moral level of nurses is not important. The ethics of nurses is gradually formed during a long period of nursing practice. The internship stage is the first stop in a nurse's career and is the starting point for nursing students to come into contact with real nursing work, moral education for nursing students during the internship stage can help to make them fully aware of the importance of nursing ethics, form a good concept of nursing ethics and lay a good foundation for further deepening it in future nursing work over practice, so that nursing ethics can be carried through their entire career.<sup>10</sup>

The education model based on the integration of moral and medical education is a new type of education model with comprehensive and systematic characteristics, which advocates that while educating nursing students on professional knowledge and skills, attention should be paid to cultivating and improving the quality of nursing morality in practice so that moral education and professional education can be integrated and the professional level of nursing students can be improved simultaneously. Li Q et al's study<sup>11</sup> showed that using a medical ethics education model to educate nursing students

can help them improve their medical ethics, and Wu Bangjing et al's study<sup>12</sup> also confirmed this. Therefore, the present study hypothesized that the education model based on "moral and medical integration" would be effective in the education of nursing students in the operating room.

To improve the overall quality of nursing students and make them become excellent talents in nursing, the study showed that the study group was able to improve the overall quality of nursing students. The results of our study show that the nursing theory and nursing skills scores of the study group were higher than those of the control group, and the scores of the professional nursing practice ability of the study group were also higher than those of the control group after the education, indicating that the education model based on "moral and medical integration" can help improve the professional level of nursing students in the operating theatre. Through a variety of learning activities, competitions, and public welfare activities, the education model based on the "integration of ethics and medicine" helps to increase nursing students' enthusiasm for learning, make them fully aware of the importance and necessity of nursing ethics, strengthen their sense of gain and self-worth in improving nursing ethics, enhance their sense of professional benefit, and make the improvement of nursing ethics a motivation for them to learn professional knowledge. This will enhance the student's sense of professional benefit and make it possible for them to improve their professionalism.<sup>13</sup>

Our study further found that the moral courage scores of the study group were higher than those of the control group after the education, confirming the importance of an education model based on 'ethical integration' in improving the moral standards of nursing students in the operating theatre. Moral courage refers to an individual's ability to do the right thing based on moral values when faced with a known risk.<sup>14</sup> In today's increasingly complex global society, the ethical risks faced in the nursing process are increasing, putting nurses' moral standards to the test, and nurses are increasingly experiencing moral dilemmas (the painful feelings and/or psychological imbalances that arise when an individual knows the right action to take but is unable to do so for various reasons, either internal or external).<sup>15</sup> Moral courage is an important virtue in dealing with moral dilemmas, helping nurses to expand their moral space, alleviate their moral dilemmas, and maintain their moral integrity.<sup>16</sup> The education model based on "moral and medical integration" is to help nursing students establish a strong moral philosophy and strengthen the moral quality of nurses through various offline activities and online education, and to teach them the correct way to deal with moral risks and moral dilemmas in their future career paths, thus laying a solid foundation for the sustainable development of moral courage. This will lay a solid foundation for the continuous development of their moral courage, thus contributing to the improvement of their overall nursing ethics.

The education model based on the "integration of ethics and medicine" is based on a variety of activities and a



combination of online and offline education methods,<sup>17</sup> breaking away from the professional and stereotypical teaching of concepts, making students fully aware of the importance of nursing ethics, internalizing, and externalizing nursing ethics, and integrating the cultivation of nursing ethics into their professional development, thus promoting the overall The results of this study show that the nursing student's perceptions of the importance of nursing ethics have been improved. The results of this study show that nursing students are more satisfied with the education model based on "moral and medical integration", which indicates that the education model based on "moral and medical integration" is largely accepted by nursing students and helps to promote a harmonious teaching relationship and is conducive to the overall The high level of satisfaction indicates that the education model based on "moral and medical integration" is largely accepted by nursing students and helps to promote harmonious teaching relationships and improve the overall teaching standard.

## CONCLUSION

The education model based on the "integration of ethics and medicine" helps to improve the professional level of nursing, strengthen the professional nursing practice, improve moral courage and educational satisfaction of nursing students in the operating theatre, and is worthy of wide application and promotion in the education of nursing students.

## CONFLICTS OF INTEREST

The authors report no conflict of interest.

## AVAILABILITY OF DATA AND MATERIALS

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## FUNDING

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