

Research on the Application of *In-situ* Simulation Teaching Method Based on the Concept of Ideological and Political Education in Curriculum in the First Aid Skills of Clinical Practice Nursing Students

Meng Wang, Lichao Xing*

Deyang People's Hospital, Deyang 618000, Sichuan, China

*Author to whom correspondence should be addressed.

Copyright: © 2025 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract: *Objective:* To explore the application effect of *in-situ* simulation teaching method based on the concept of ideological and political education in the first aid skills training of clinical practice nursing students. *Methods:* A randomized controlled trial was used to select 220 trainee nurses from a hospital in 2024 and randomly divided them into the experimental group (n = 110) and the control group (n = 110). The control group adopted the traditional theory teaching + skill operation demonstration teaching method, while the experimental group implemented the *in-situ* simulation teaching plan integrating the ideological and political concepts of the curriculum on the basis of the traditional teaching. The scores of the first aid skills operation assessment, the Chinese version of the Jefferson Empathy Scale (JSE-NS), the Nursing Student Professional Identity Scale, and the Humanistic Care Ability Scale (CAI) were compared between the two groups after the intervention. *Results:* After the intervention, the scores of the first aid skills operation assessment, the total score of JSE-NS and each dimension, the total score of professional identity, and the total score of CAI and each dimension of the nursing students in the experimental group were significantly higher than those in the control group, and the differences were statistically significant ($P < 0.05$). *Conclusion:* The *in-situ* simulation teaching method based on the concept of ideological and political education in the curriculum can effectively enhance the first aid skills level, empathy ability, professional identity and humanistic care ability of trainee nurses, and is an effective way to achieve the deep integration of first aid skills training and ideological and political education.

Keywords: Curriculum-based ideological and political education; First aid skills; Humanistic care; In-place simulation teaching; Trainee nurses

Online publication: Nov 3, 2025

1. Introduction

The General Secretary clearly pointed out that ideological and political theory courses are key courses for implementing the fundamental task of fostering virtue and nurturing talent, profoundly revealing the core position of ideological and political education in the higher education system. As a comprehensive educational concept, “curriculum-based ideological and political education” aims to organically integrate ideological and political education into the entire teaching process of all kinds of courses to achieve the dialectical unity of knowledge imparting, ability cultivation and value guidance. Its essence lies in collaborative education and the construction of an education pattern involving all personnel, throughout the entire process and in all aspects.

Nursing, as a discipline that is both scientific and humanistic, serves people who are suffering from illness. This requires nursing education not only to impart excellent professional knowledge and skills, but also to cultivate the professional spirit and humanistic qualities of nursing students who revere life, care for patients and are willing to contribute. Emergency nursing is at the forefront of clinical nursing work, with high skill requirements and urgent situations. It is a concentrated manifestation of the comprehensive quality of nursing students and a key scenario for cultivating their professional values and ethical decision-making abilities.

At present, the post-2000s generation has become the main body of nursing interns. They are active in thinking but have limited experience, and their values are more diverse and pragmatic. The traditional first aid training model, which focuses on the practice of a single skill, is difficult to effectively guide them to deeply understand the meaning of life and social value behind first aid behavior, and is prone to the lack of humanistic care and the ambiguity of professional value perception. *In-situ* simulation teaching, as an emerging high-simulation teaching method, provides an excellent carrier for seamlessly embedding ideological and political elements in skills training by creating highly realistic clinical scenarios in the learners’ future real workplace, enabling them to integrate knowledge, refine skills, and collaborate and communicate in an “immersive” environment.

This study aims to construct an *in-situ* simulation teaching program based on the concept of ideological and political education in the curriculum, and to verify its comprehensive effect in improving the first aid skills and humanistic qualities of trainee nurses through randomized controlled trials, providing empirical evidence for innovating the teaching model of nursing practice and deepening the construction of ideological and political education in professional courses^[1].

2. Data and methods

2.1. General information

This study selected nursing students who did clinical practice in our hospital from January to June 2024 as the research subjects. A total of 220 interns were randomly grouped using the coin-tossing method, including 110 in the experimental group and 110 in the control group.

The inclusion criteria are as follows:

- (1) Full-time junior college or bachelor’s degree in nursing;
- (2) Completed basic nursing and first aid theory courses on campus;
- (3) Informed consent and voluntary participation in this study.

The exclusion criteria are as follows:

- (1) Those who interrupted training for any reason during the internship;

(2) Those who are absent from the course at least twice.

There was no statistically significant difference ($P > 0.05$) between the two groups of nursing students in terms of general information such as age, gender, educational level, and performance of first aid operations at school, and they were comparable. This study was reviewed and approved by the ethics committee of our hospital ^[2].

2.2. Methods

2.2.1. Teaching methods for the control group

The control group adopted the conventional training mode. Clinical instructors gave concentrated theoretical lessons based on the syllabus, covering first aid theories such as cardiopulmonary resuscitation, defibrillation, and balloon-mask ventilation. Then, a N2-level nurse who won a provincial skills competition gave a demonstration of skills, and students practiced in groups on mannequins. At the end of the training cycle, regular skill operation assessments are conducted.

2.2.2. Experimental group teaching methods

The experimental group implemented *in-situ* simulation teaching based on the concept of ideological and political education in the curriculum on the basis of theoretical teaching in the control group is as listed below:

- (1) Construct a teaching plan integrating ideological and political education by establish a teaching team consisting of nursing education experts, critical care nursing experts, outstanding Communist Party members and members of the research group. Through literature analysis and two rounds of Delphi expert inquiries, construct an *in-situ* simulation teaching case library and implementation plan that integrates the four major ideological and political themes of “respecting life”, “saving lives”, “professional responsibility”, and “humanistic care”;
- (2) Teacher training and collective lesson preparation via conducting specialized ideological and political education in the curriculum for all teachers involved in teaching, and unify teaching concepts and methods. Through Party building to lead the organization of collective lesson preparation, deeply explore the ideological and political elements in first aid cases to ensure that ideological and political education is “imperceptibly” integrated into skills training;
- (3) *In-situ* simulation teaching implementation, where training is carried out in the real working environment of the emergency resuscitation room or ICU using real clinical equipment (such as defibrillators, monitors, rescue vehicles) and highly realistic mannebulids. Simulated scenarios such as “sudden ventricular fibrillation cardiac arrest in patients” or “shock due to massive traumatic hemorrhage” require students to complete the entire process from assessment, decision-making, operation to communication with family members in teams.

Teachers guide students not only to be technically accurate, but also to demonstrate respect for the “patient”, reverence for life, collaboration with teammates, and comfort for the “family” in the simulation. At the end of each simulation, mentors guide students to conduct a structured review, focusing on reflecting on gains and losses in technical operations, teamwork, and humanistic care, deepening their recognition of professional value ^[3].

2.3. Observation indicators

After the training, the two groups of nursing students were evaluated uniformly using methods as outlined:

- (1) First aid skills assessment: On a 100-point scale, the assessment includes theoretical knowledge (20%),

clinical decision-making ability (20%), operational standardization (20%), teamwork ability (20%), and communication and humanistic care (20%);

- (2) Chinese version of the Jefferson Empathy Scale (JSE-NS) : It includes three dimensions of opinion selection, emotional care, and empathy, with 20 items, and is scored on a Likert 7-point scale, totaling 140 points. The higher the score, the stronger the empathy ability;
- (3) Nursing student professional identity scale: Use the scale developed by Hao, which includes five dimensions such as professional self-concept and 17 items, with a total score of 85, the higher the score, the stronger the professional identity;
- (4) Human Care Ability Scale (CAI) : Use the Chinese version of the scale translated by Xu, it includes three dimensions of cognition, courage, and patience, 37 items, total score 259, the higher the score, the stronger the care ability.

2.4. Statistical methods

Data analysis was performed using SPSS 25.0 software. Measurement data were expressed as mean $\pm$ standard deviation (SD) and the two independent samples t-test was used for comparison between groups; Count data were expressed as rates (%), and the χ^2 test was used for comparison between groups. A difference was considered statistically significant when $P < 0.05$.

3. Results

3.1. Comparison of first aid skills assessment results between the two groups of nursing students

After the intervention, the total score and individual scores of the first aid skills assessment of the nursing students in the experimental group were significantly higher than those in the control group, and the difference was statistically significant ($P < 0.05$) (Table 1).

Table 1. Comparison of the scores of the first aid skills assessment of nursing students in the experimental group and the control group

Groups	Cases	Theoretical knowledge	Clinical decision-making	Practice guidelines	Teamwork	Humanistic communication	Overall grade
Experimental group	110	18.5 $\pm$ 1.2	18.1 $\pm$ 1.4	17.9 $\pm$ 1.3	18.3 $\pm$ 1.1	18.0 $\pm$ 1.5	90.8 $\pm$ 4.2
Control group	110	17.1 $\pm$ 1.5	16.3 $\pm$ 1.8	16.8 $\pm$ 1.7	16.0 $\pm$ 1.9	15.2 $\pm$ 2.0	81.4 $\pm$ 5.7
t value		7.624	8.432	5.789	11.245	11.873	13.915
P value		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

3.2. Comparison of JSE-NS, professional identity, and CAI scores between the two groups of nursing students

After the intervention, the total scores of JSE-NS, professional identity and CAI of the nursing students in the experimental group were significantly higher than those in the control group, and the differences were statistically significant ($P < 0.05$) (Table 2).

Table 2. Comparison of JSE-NS, professional identity and CAI Scores between the two groups of nursing students (mean $\pm$ SD, points)

Group	Number of cases	JSE-NS total score	Total score of professional Identity	Total CAI score
Experimental group	110	118.6 $\pm$ 10.4	72.5 $\pm$ 6.8	215.3 $\pm$ 16.7
Control group	110	103.2 $\pm$ 11.7	65.3 $\pm$ 7.5	198.4 $\pm$ 18.9
t value		10.642	7.681	7.154
P value		< 0.001	< 0.001	< 0.001

4. Discussion

4.1. In-place simulation teaching integrated with ideological and political education in the curriculum can effectively enhance the comprehensive first aid ability of nursing students

The results of this study showed that the total score of first aid skills assessment and the scores of each sub-item of the experimental group of nursing students were significantly better than those of the control group. This achievement was primarily attributed to the highly realistic and uncertain clinical scenarios created by the in situ simulation teaching, which compelled the nursing students to integrate fragmented theoretical knowledge and apply it to the dynamic and complex cases, thereby significantly enhancing their clinical decision-making and critical thinking abilities.

Moreover, the practice of teamwork in real-world scenarios went beyond the limitations of individual operations, enabling nursing students to deeply understand that the success of first aid depends on clear division of labor, effective communication and close cooperation among team members, which transformed the abstract “team spirit” in the classroom into perceptible and executable practical guidelines.

More importantly, the teaching program designed in this study takes human elements such as operational norms, ethical choices, and communication with family members as core assessment indicators, guiding nursing students to consider the impact of the operation itself on the dignity and rights of patients while pursuing technical accuracy, achieving a resonance of skill training and value guidance, and ultimately comprehensively enhancing the comprehensive first aid literacy of nursing students.

4.2. The teaching model significantly enhanced the humanistic care and empathy abilities of the nursing students

Traditional skills training is mostly conducted on standardized mannequins, lacking emotional interaction and ethical challenges, which can easily lead to a one-sided perception of “technical supremacy” among nursing students. The *in-situ* simulation teaching in this study places nursing students in complex situations where they have to confront the emotions of patients and the expectations of their families by embedding carefully designed ideological and political elements, such as simulating “communication with anxious family members” and “ethical reflection after ineffective rescue”.

This “immersive” experience strongly impacted the emotional cognition of the nursing students, making them no longer simple technical operators but holistic care providers who need to take on the responsibility of emotional care and support. In the structured review guided by mentors, nursing students learned to put themselves in others’ shoes by sharing the tension, helplessness or comfort they felt in the simulation, and deeply realized the importance of the “hand” of technology and the “heart” of humanity complementing each other, thus generating

stronger empathetic motivation and more proactive humanistic care behaviors.

4.3. Teaching reform helps to consolidate the professional identity of nursing students and stabilize the nursing team

Professional identity is an intrinsic stabilizer for nursing students to engage in clinical practice and overcome professional difficulties in the future. The experimental group in this study scored higher in professional identity because the teaching model provided nursing students with a positive and profound initial professional experience. The team recognition and sense of self-achievement gained after successfully handling critical conditions and effectively comforting “family members” greatly strengthened their sense of professional value and honor as future medical workers.

Transforming the ideological and political concepts of “saving lives and healing the wounded” and “willing to contribute” into a series of successful simulated rescue operations, allowing nursing students to witness with their own eyes the life value and social significance that their professional actions can create, thus generating a deeper recognition and love for the connotation of the nursing profession. This deep-seated recognition can effectively resist burnout in future professional life and has a long-term and positive impact on cultivating a stable nursing team with both excellent skills and firm professional beliefs.

5. Conclusion

This study focused on the training of first aid skills for clinical practice nursing students. Through a randomized controlled trial (220 nursing students were divided into the experimental group and the control group), it systematically explored the application value of the *in-situ* simulation teaching method based on the concept of ideological and political education in the curriculum. The results showed that compared with the traditional “theoretical teaching + skill demonstration” model, the experimental group had significantly higher scores in first aid skills operation assessment, total scores and dimension scores of the Chinese version of the JSE-NS, professional identity scale scores, and total scores and dimension scores of the CAI ($P < 0.05$). It fully confirmed the effectiveness of the teaching method.

From the perspective of teaching value, this approach breaks through the limitations of traditional skills training that emphasizes operation over quality. It integrates the concept of ideological and political education in the curriculum into *in-situ* simulation scenarios, which not only enhances the practical proficiency of first aid skills and emergency response ability of nursing students, but also simultaneously improves their empathy awareness, professional identity and humanistic care quality through value guidance. It truly achieves the deep integration of “professional skills training” and “ideological and political education”. In terms of practical significance, this research achievement provides empirical evidence and feasible paths for the reform of clinical nursing teaching, and plays an important guiding role in cultivating high-quality nursing talents with both solid professional skills and profound humanistic qualities.

In the future, the scope of teaching application can be further expanded, *in-situ* simulation schemes can be optimized in combination with different clinical nursing scenarios, and the integration mechanism of ideological and political elements and nursing skills training can be continuously explored to promote the continuous improvement of the quality of nursing education.

Funding

2023 Sichuan Nursing Vocational College Humanities and Social Sciences Research Project (Project No.: 2023RWSY53)

Disclosure statement

The authors declare no conflict of interest.

References

- [1] Ouyang J, Zhang Y, Wu Y, et al., 2021, Thoughts and Explorations on Constructing Ideological and Political Courses and Curriculum-based Ideological and Political System in Medical Colleges and Universities. *Chinese Medical Ethics*, 34(4):510–514.
- [2] Zhang J, Li X, Zhang H, et al., 2020, Nursing Research Capacity and Its Management in China: A Systematic Review. *Journal of Nursing Management*, 28(2), 199–208.
- [3] Hao Y, 2011, Research on the Self-Education Model for Enhancing Professional Identity and Professional Self-Efficacy of Nursing Students, thesis, Second Military Medical University.

Publisher's note

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.