Study on the Construction and Evaluation System of Clinical Midwifery Teaching Faculty under the New Nursing Model

Ying Zhou, Xiwei Zhang*, Lijun Song, Yingying Xiao, Hua Zhang

Department of Obstetrics and Gynecology, Beijing Anzhen Hospital, Capital Medical University, Beijing 100029, China

*Corresponding author: Xiwei Zhang, anna13601216142@163.com

Abstract: *Objective:* To explore the impact of the construction of a clinical midwifery teaching faculty and the development of an evaluation system under the new nursing model on the current teaching quality. *Methods:* From July 2022 to March 2023, 10 clinical teaching teachers and 20 midwifery interns from Beijing Anzhen Hospital affiliated with Capital Medical University were selected as the subjects of this study. The clinical teaching teachers and midwifery interns were divided into an observation group and a control group, with each group including 5 clinical teaching teachers and 10 midwifery interns. The observation group received daily management and evaluation under the new nursing model, while the control group received management and evaluation under the traditional nursing model. The teaching quality evaluation of clinical midwifery teaching teachers by midwifery interns, the exit exam scores of midwifery interns, and the scores of clinical teaching teachers' internship lectures and teaching rounds were compared between the two groups. *Results:* In the observation group, the scores for teaching attitude, teaching skills, and teaching management in the teaching quality evaluation of clinical midwifery teaching teachers were higher than those in the control group. The professional theory scores (91.28 ± 3.64) and overall nursing comprehensive scores (92.56 ± 4.38) of midwifery interns in the observation group were higher than those of midwifery interns in the control group (81.58 ± 2.27 and 80.29 ± 3.33, respectively). The scores for internship lectures (89.32 ± 4.15) and teaching rounds (90.64 ± 5.52) in the observation group were also significantly higher than those in the control group (80.46 ± 3.28 and 81.24 ± 4.38, respectively), and the differences were statistically significant ($P < 0.05$). *Conclusion:* The management of the clinical midwifery teaching faculty under the new nursing model effectively improved the quality of clinical teaching. It significantly enhanced the teaching effectiveness of clinical teaching teachers and the proficiency of midwifery interns in clinical operations, making it worthy of promotion and use.

Keywords: Clinical teaching; Teaching faculty; New nursing model; Evaluation system

1. Introduction

In recent years, with the development of society, factors such as the declining population growth rate and the extended lifespan of the elderly have accelerated the aging process of China's society, leading to an increasing

number of elderly people in the population structure. Meanwhile, China's birth rate has also begun to decline. To maintain the advantage of human resources and sustain balanced social development, it is crucial to improve the population structure promptly in today's society. In response, China has gradually opened up the policies for the second and third child. With the adjustment of birth policies, the number of pregnant women in China has shown a significant increase in the past two years, with a rising proportion of elderly pregnant women each year. Consequently, there have been many changes in the demands for modern nursing concepts, techniques, and methods [1]. This not only raises the requirements for midwives but also poses higher demands and challenges for nursing education under the new nursing model.

Currently, clinical midwifery teaching in nursing education is a crucial means to improve the quality of midwifery professionals and ensure the safety and health of mothers and newborns [2]. However, the traditional clinical midwifery teaching model has revealed some issues under the new nursing demands, which have become bottlenecks limiting the further development of clinical midwifery teaching. Due to the insufficient teaching staff, there are relatively few clinical midwifery instructors, making it difficult to guarantee the teaching quality for the numerous midwifery interns. An imperfect training system is also a problem that needs to be addressed [3]. Traditional clinical midwifery teaching models often focus only on the imparting of theoretical knowledge, with little guidance on practical operations and experience sharing, and lack interactivity. As a result, midwifery interns often find it challenging to adapt to the real work environment after training, and the learning content is not effectively utilized [4]. Therefore, improving the efficiency and quality of clinical midwifery teaching has become an urgent issue.

In response, Beijing Anzhen Hospital affiliated with Capital Medical University has implemented the construction of a clinical midwifery teaching faculty under the new nursing model and applied its evaluation system. By analyzing and evaluating various aspects such as the teaching quality evaluation of clinical midwifery instructors by midwifery interns, the exit exam scores of midwifery interns, and the scores of clinical midwifery instructors' internship lectures and teaching rounds between the observation group and the control group, significant results have been achieved.

2. Materials and methods

2.1. General information

From July 2022 to March 2023, 10 clinical teaching teachers and 20 midwifery interns were selected from Beijing Anzhen Hospital affiliated with Capital Medical University as the subjects of this study. Using a random number method, the clinical teaching teachers and midwifery interns were divided into an observation group and a control group, each group including 5 clinical teaching teachers and 10 midwifery interns. All midwifery interns were female. The age distribution of the midwifery interns in the observation group was between 20 and 24 years old, with an average age of (21.2 ± 0.82) years, and all had a bachelor's degree. The clinical teaching teachers in the observation group were aged between 35 and 48 years, with an average age of (41.2 ± 2.32) years, all holding a bachelor's degree, and having 4 to 12 years of work experience. The control group midwifery interns were aged between 21 and 23 years, with an average age of (22.3 ± 0.56) years, and all had a bachelor's degree. The clinical teaching teachers in the control group were aged between 34 and 45 years, with an average age of (39.3 ± 1.41) years, all holding a bachelor's degree, and having 3.5 to 11 years of work experience. The basic information such as age distribution and education level of the midwifery interns in the observation and control groups were similar, with no statistically significant difference $(P>0.05)$, and this study complies with medical ethics principles.

Selection criteria:

(1) Clinical teaching teachers with more than 3 years of midwifery clinical teaching experience.

(2) Clinical teaching teachers who have not received relevant training in the past two years.

(3) Clinical teaching teachers who complete clinical teaching tasks for at least 30 students each year.

2.2. Methods

The control group used traditional clinical midwifery teaching methods. The midwifery teaching teachers formulated teaching plans and led midwifery interns to complete the content of the midwifery plan on time. The observation group adopted the construction of a clinical midwifery teaching faculty under the new nursing model and applied a new evaluation system for clinical midwifery teaching. Specific measures for the construction of the clinical midwifery teaching faculty under the new nursing model included:

(1) Organizing professional skills training: Specialized skills training for clinical midwifery teachers, including obstetrics and gynecology knowledge, educational psychology, teaching methods, and teaching techniques. The training was conducted both online and offline, covering theoretical knowledge and practical operations.

(2) Conducting educational research: Encouraging clinical midwifery teachers to participate in educational research to improve their awareness and level of educational research, thereby promoting continuous improvement in teaching quality.

(3) Strengthening the construction of the clinical midwifery teaching faculty: (a) Optimizing teaching resources: Ensuring adequate and updated teaching facilities and equipment to provide better teaching conditions for clinical midwifery teachers; (b) Enhancing interaction: Encouraging communication and interaction between clinical midwifery teachers and midwifery interns, conducting team-building and training activities to enhance collaboration and team cohesion; (c) Strengthening communication and cooperation with schools and other relevant departments, inviting professional teachers from colleges to provide theoretical knowledge training for midwifery interns, forming a good mechanism for joint training and mutual support, and promoting the professional development of clinical midwifery teaching.

(4) Establishing a sound management system: (a) Assessment and evaluation mechanism: Establishing unified assessment and evaluation standards and mechanisms to evaluate the performance of clinical midwifery teachers, identifying problems promptly, and providing improvement suggestions and guidance; (b) Reward and punishment system: Establishing a reward and punishment system to commend and reward clinical midwifery teachers who perform well in teaching and to warn and improve those who perform poorly.

The construction of the clinical midwifery teaching faculty evaluation system mainly includes:

(1) Setting evaluation indicators: Determining corresponding evaluation indicators based on the goals and requirements of clinical midwifery teaching.

(2) Using multiple evaluation methods, including classroom observation, case analysis, and exam evaluation, to ensure the accuracy and reliability of the evaluation.

(3) Formulating evaluation standards based on evaluation indicators and methods for quantitative analysis and comprehensive evaluation.

(4) Setting different scoring standards for different evaluation indicators to ensure fairness and authority in the evaluation results.

(5) Determining the evaluation cycle based on actual situations, conducting comprehensive evaluations once each semester or year, and implementing random inspections and on-site supervision to ensure the

comprehensiveness and authenticity of the evaluation.

(6) Implementing an evaluation results feedback mechanism: Timely feedback of evaluation results to clinical midwifery teachers to help them understand their strengths and weaknesses and improvement directions. At the same time, establishes corresponding reward and punishment systems to motivate outstanding clinical midwifery teachers and urge and correct those who do not meet the standards.

After the study, the professional theory and overall nursing performance of the midwifery interns in the observation and control groups were assessed, with the teaching duration for both groups being two months.

2.3. Observation indicators

(1) After two months of teaching, the teaching quality evaluation of clinical midwifery teachers by midwifery interns, the exit exam scores of midwifery interns, and the scores of clinical midwifery teachers' internship lectures (out of 100) and teaching rounds (out of 100) were compared between the observation group and the control group. The exit exam scores of midwifery interns included professional theory scores (out of 100) and overall nursing comprehensive scores (out of 100).

(2) After two months of teaching, data collection was carried out through questionnaires and score statistics. The questionnaires for midwifery interns included the teaching quality evaluation of clinical midwifery teachers. The data on midwifery interns' exit exam scores and clinical midwifery teachers' internship lectures and teaching rounds scores were summarized by the course leader.

2.4. Statistical methods

In this study, the count data (χ^2) and measurement data (t) were analyzed using statistical software SPSS version 24.0. The data were presented as [n (%)] and mean ± standard deviation (SD). A P-value < 0.05 was considered statistically significant.

3. Results

3.1. Comparison of teaching quality evaluation of clinical midwifery teachers by midwifery interns in the observation group and control group

In the evaluation of teaching quality by midwifery interns, the scores for teaching attitude, teaching skills, and teaching management of clinical midwifery teachers in the observation group were higher than those in the control group, with statistically significant differences (P < 0.05). The differences in professional knowledge and professional skills between the observation group and the control group were not significant (P > 0.05). See **Table 1**.

Table 1. Comparison of teaching quality evaluation of clinical midwifery teachers by midwifery interns (mean ± SD, points)

Groups	Professional knowledge	Teaching attitude	Professional skills	Teaching skills	Management
Observation group (n = 10)	18.18 ± 2.64	18.46 ± 1.56	17.64 ± 2.41	19.89 ± 1.47	15.89 ± 1.55
Control group (n = 10)	17.89 ± 3.45	14.89 ± 2.12	17.56 ± 2.45	13.66 ± 2.42	18.05 ± 2.51
t	0.211	4.289	0.074	6.958	2.315
P	0.835	< 0.001	0.942	< 0.001	0.033

3.2. Comparison of exit exam scores of midwifery interns in the observation group and control group

The professional theory scores and overall nursing comprehensive scores of midwifery interns in the observation group under the new nursing model were higher than those of the control group ($P < 0.05$). See **Table 2**.

Table 2. Comparison of exit exam scores of midwifery interns (mean ± SD, points)

Groups	Professional theory score	Overall nursing comprehensive achievement
Observation group ($n = 10$)	91.28 ± 3.64	92.56 ± 4.38
Control group ($n = 10$)	81.58 ± 2.27	80.29 ± 3.33
t	7.150	7.052
P	< 0.001	< 0.001

3.3. Comparison of internship lecture scores and teaching round scores of clinical midwifery teachers in the observation group and control group

The internship lecture scores and teaching round scores of the observation group under the new nursing model were higher than those of the control group ($P < 0.05$). See **Table 3**.

Table 3. Comparison of internship lecture scores and teaching round scores of clinical midwifery teachers (mean ± SD, points)

Groups	Internship lectures	Teaching rounds
Observation group ($n = 5$)	89.32 ± 4.15	90.64 ± 5.52
Control group ($n = 5$)	80.46 ± 3.28	81.24 ± 4.38
t	3.745	2.983
P	0.006	0.018

4. Discussion

Population aging is a prominent social issue in today's world. The number and proportion of elderly people in the total population are increasing in many countries, and China is no exception [5]. To ensure the stability of the population structure and the advantage of population resources, China has gradually opened up the second and third-child policies in recent years. This has led to a rapid increase in the number of pregnant women in China over the past two years, with a significant proportion of elderly pregnant women. With the continuous updating of medical technology and improvement of diagnostic and treatment methods, the demand for clinical care of pregnant women has changed significantly compared to the past. This has led to constant changes in clinical nursing models, posing higher demands and challenges for nursing education [6]. As an important part of nursing education, clinical midwifery teaching can provide more professional talents for nursing work, playing a crucial role in improving the quality of midwifery professionals and ensuring the safety and health of mothers and newborns. It also provides effective protection for the continuous development of the midwifery profession [7,8].

However, there are some issues with the traditional clinical midwifery teaching model that have severely affected and hindered its development. Clinical midwifery teaching often faces a shortage of teaching staff. The relatively small number of clinical midwifery teachers makes it difficult to meet the demands of midwives. Additionally, traditional clinical teaching methods are often single-faceted, rigid, and lack targeted approaches,

making it difficult to identify issues with nursing personnel promptly [9]. Furthermore, the training system is inadequate. Traditional clinical midwifery teaching often focuses solely on theoretical knowledge transmission, with little guidance on practical operations and experience sharing. This leaves students unable to adapt to the real work environment after training, while clinical practice is the core of achieving nursing talent training goals [10]. Moreover, traditional "cramming" teaching methods cannot meet the needs of specialized development and nursing students, restricting the development of nursing students' learning abilities [11].

To address these issues, this study aims to explore the characteristics and advantages of clinical midwifery teaching under the new nursing model and construct an evaluation system suitable for this model to improve the quality of clinical midwifery education and promote the continuous development of the midwifery profession. First, clinical midwifery teaching under the new nursing model focuses more on guidance in practical operations and experience sharing, allowing students to better understand the real work environment and adapt to work requirements. Second, the new model advocates diverse training methods and forms, such as online classes, practical drills, and case analyses, providing a richer and more comprehensive learning experience for students and giving them as many clinical learning and practice opportunities as possible, thereby enhancing their clinical comprehensive abilities [12].

This study constructed an evaluation system for clinical midwifery teachers suitable for the new nursing model to better assess the abilities and qualities of clinical midwifery teachers. This mainly includes the evaluation of teaching abilities, such as course design and teaching methods; the evaluation of practical operation abilities, such as skill demonstration and operation level in a real work environment; and the evaluation of personal qualities and professional ethics, such as attitudes towards students and patients, sense of responsibility, enthusiasm, and teamwork. Through the establishment of the evaluation system, the results can be promptly fed back to the clinical midwifery teachers, which can better promote the development of clinical midwifery teaching and improve the overall quality of midwifery professionals [13].

The results of this study show that the professional theory scores, overall nursing comprehensive scores, internship lecture scores, and teaching round scores of the midwifery interns in the observation group under the new nursing model are higher than those of the control group, with statistically significant differences ($P < 0.05$). This indicates that the construction of a clinical midwifery teaching faculty and evaluation system under the new nursing model can significantly improve and enhance various aspects of clinical teaching quality.

In conclusion, clinical midwifery teaching under the new nursing model is innovative and practical, better meeting the needs of midwifery training and the health care needs of mothers and newborns. By strengthening the training and management of clinical midwifery teachers, improving their teaching levels and professional qualities, and constructing an evaluation system suitable for this model, the quality of clinical midwifery education can be improved, and more excellent midwifery professionals can be cultivated, injecting more vitality and motivation into the development of the midwifery profession.

Funding

Disclosure statement

The authors declare no conflict of interest.

References

[1] Yu X, 2023, Research on the Model of Higher Vocational Nursing Education: The Impact of Nursing Model Transformation on Higher Vocational Nursing Education. Interventional Radiology Journal, 32(3): 1.

[2] Zhou F, Sun J, Zou Q, 2023, Exploration of Work Manual Teaching Materials in Higher Vocational Education. Journal of Contemporary Education Research, 7(4): 30–33. https://doi.org/ 10.26689/jcer.v7i4.4870

[3] Zhou M, Wang J, Wang J, et al., 2023, Construction of a Localized and Long-Acting CCN2 Delivery System on Percutaneous Ti Implant Surfaces for Enhanced Soft-Tissue Integration. ACS Applied Materials & Interfaces, 15(19): 22864–22875. https://doi.org/10.1021/acsami.3c00884

[4] Zhang X, Gao X, Zhang H, et al., 2021, Application of Humanized Teaching Mode in Clinical Teaching of Obstetrics and Gynecology. Chinese Continuing Medical Education, 13(26): 4.

[5] Lin J, Zheng Y, 2021, Analysis of the Training Model for Elderly Nursing Talents in the United States. Chinese University Teaching, 2021(4): 89–96.

[6] Xiao Y, Mo C, Yang Y, et al., 2021, Qualitative Research on the Internship Experience of the First Cohort of Second-Year Midwifery Undergraduates in China under the Dual Teaching Mode. General Nursing, 19(15): 2119–2122.

[7] Yang H, Yan E, Zhao J, et al., 2021, Publication: New Nurse Standardized Training (Clinical Nursing Operation Skills and Behavioral Norms): The Application of Modular Teaching Integrating Micro-lectures and TBL in the Professional Quality Training of New Nurses. Interventional Radiology Journal, 30(9): 978.

[8] Yang X, Tian H, Jiang Q, et al., 2023, Research on the Optimization of Internal Control Evaluation System in Public Hospitals Based on Integration View. Chinese Health Economics, 42(1): 5.

[9] Gan S, He J, Ge J, et al., 2021, Construction and Application of Comprehensive Teaching Model in the Standardized Training of Interventional Nursing. Interventional Radiology Journal, 30(11): 1175–1179.

[10] Sun T, Wei L, Gu R, et al., 2022, Development and Application of Clinical Nursing Skills Training Teaching Software. Chinese Nursing Journal, 57(10): 1225–1230.

[11] Ji X, Wang L, Qi W, 2022, Research on the Effect of Team Teaching Method in the Nursing Teaching of Disinfection Supply Center. Chinese Disinfection Journal, 39(8): 4.

[12] Yang Y, Zhang R, Xu Y, et al., 2022, Construction of Evaluation Standard System for Clinical Practice Base of Master of Nursing Specialty. Chongqing Medicine, 51(23): 4121–4126.

[13] Zhang W, Chai H, Wang P, et al., 2022, Huaxi Practice of Building a Full-time Clinical Teaching Faculty Team under the Background of Medical-Education Collaboration. Huaxi Medicine, 37(12): 5.