

Current status and influencing factors of clinical teachers' teaching abilities for Master of Nursing Specialist postgraduates: a cross-sectional study[†]



Original Article

Yang-Shuo Li^{a,*,#}, Jing-Jing Wang^{a,*,#}, Ru-Ru Guo^a, Yan Shi^a, Na-Na Liu^b, Qian-Qian Liu^c

^aDepartment of Community Nursing Education and Research, School of Nursing and Health, Zhengzhou University, Zhengzhou, Henan 450007, China

^bCardiac Surgical Department, The Second Affiliated Hospital of Zhengzhou University, Zhengzhou, Henan 450003, China

^cRehabilitation Department, The Affiliated Children's Hospital of Zhengzhou University (Henan Children's Hospital; Zhengzhou Children's Hospital), Zhengzhou, Henan 450003, China

Received: 7 March 2025; Accepted: 2 April 2025; Published: 20 June 2025

Abstract: **Objective:** To assess the teaching efficacy of clinical instructors for MNS postgraduates, this study aims to gather insights into clinical educators' perceptions concerning MNS postgraduate training and identify key competencies required for effective teaching.

Methods: This study utilized a cross-sectional design. An online questionnaire survey was distributed among clinical faculty members engaged in the education of MNS postgraduates. The survey addressed 4 areas: general teaching conditions, perceptions regarding training for MNS postgraduates, core competencies expected from clinical teachers, and implementation strategies for delivering clinical instruction tailored to these graduates.

Results: A total of 143 clinical teachers supervising MNS postgraduates completed the questionnaire. Of these respondents, 101 (70.62%) held a bachelor's degree while 42 (29.37%) possessed a master's degree. Although these clinicians demonstrated certain core competencies, they exhibited lower proficiency in understanding trends related to scientific advancements and current research priorities along with limited research capabilities 4.00 (3.00, 4.00). Notably, >95.8% of teachers recognized differences between the 2 categories of postgraduate students; only 4.2% were completely unaware of such distinctions. There was no statistically significant relationship between the demographic data of clinical educators and their core competencies ($P > 0.05$).

Conclusions: This study revealed no significant correlation between the general characteristics of clinical teachers and the core competencies of MNS postgraduates. Additionally, we identified a lack of effective communication and collaboration between MNS postgraduate supervisors and clinical educators. The findings from this research offer valuable insights for further investigation into the factors that influence the core competencies of clinical teachers, as well as strategies to enhance the clinical teaching standards for MNS postgraduates.

Keywords: clinical teaching • Master of Nursing Specialist • postgraduate education • survey • teaching ability

© Shanxi Medical Periodical Press Co., Ltd.

[#] Yang-Shuo Li and Jing-Jing Wang contributed equally in the first authorship.

[†] This project was supported by the Medical Education Research Initiative of Henan Province, grant funded by the Henan Provincial Health Commission (No. Wjlx2022186).

How to cite this article: Li YS, Wang JJ, Guo RR, Shi Y, Liu NN, Liu QQ. Current status and influencing factors of clinical teachers' teaching abilities for Master of Nursing Specialist postgraduates: a cross-sectional study. *Front Nurs*. 2025;2:225–236.

*Corresponding author.

E-mail: colorfulsunwj@hotmail.com (J. -J. Wang).

Open Access. © 2025 Li et al., published by Sciendo. This work is licensed under the Creative Commons Attribution 4.0 License.

1. Introduction

High-quality education is indispensable for the advancement of the nursing profession.¹ In response to society's escalating demand for skilled nursing professionals, numerous countries are actively developing postgraduate programs aimed at cultivating high-level, applied, and specialized talent.^{2,3} In 2010, the Academic Degrees Committee of the State Council of China reviewed and approved a proposal to establish a Master of Nursing Specialist (MNS) degree program.⁴ The objective was to train highly competent nursing professionals with robust research capabilities who can engage directly in clinical practice.⁵ The development of MNS postgraduates carries significant implications for healthcare delivery.⁶ With continuous advancements in medical technology and an ever-increasing demand for health services among populations, there is an urgent need for high-quality and professional nursing talent. MNS postgraduate education not only emphasizes deepening and broadening theoretical knowledge but also prioritizes enhancing clinical practical skills and fostering innovative competencies. Through specialized training within MNS graduate programs, students gain advanced nursing concepts and techniques. Consequently, they can assume leadership roles in clinical settings by delivering meticulous scientific care that is patient-centered—thereby promoting recovery while improving overall efficiency within medical services.⁷ Therefore, prioritizing the cultivation of MNS postgraduates is crucial for advancing the profession.

The essence of cultivating MNS postgraduates lies in enhancing their clinical skills, with clinical teachers playing a pivotal role in this educational process.^{8,9}

The postgraduate education of MNS both domestically and internationally focuses on the development of theoretical foundations, specialized practical skills, and academic research abilities.¹⁰ In comparison, foreign institutions offer a more systematic and comprehensive curriculum in research project guidance and thesis writing skills. Domestic MNS postgraduate education in China primarily adopts traditional face-to-face teaching models, while foreign institutions tend to favor unstructured teaching approaches, offering students more choices and flexibility.¹¹ In terms of clinical practice, nursing graduate programs in Australia cover both clinical and non-clinical directions, with particular emphasis on enhancing practical abilities in course design.¹² For instance, the Nurse Practitioner program requires at least 300 h of clinical practice. By contrast, the MNS graduate training model at Capital Medical University includes 28 months of clinical practice and a thesis focused on clinical applied research. Overall, both domestic and international MNS graduate education

place great importance on the development of clinical practice. Clinical teachers serve as guides and practical instructors for the professional development of MNS postgraduates. Typically, they possess extensive clinical experience that enables them to assist MNS postgraduates in translating theoretical knowledge into clinical practice. They also provide ongoing mentorship and supervision, offering MNS postgraduates invaluable insights into clinical decision-making, patient care, and critical thinking. However, enhancing MNS graduates' professional competencies and comprehensive skill sets equips them to effectively navigate complex clinical situations, acting as role models and facilitators throughout the clinical learning journey.¹³ Currently, there is a growing demand for MNS postgraduates within the field of clinical nursing.¹⁴ Consequently, the number of clinical teachers is also increasing. However, many clinical nurses selected to serve as educators for MNS postgraduates have not undergone systematic teaching training,¹⁵ resulting in varying levels of teaching competence among them.¹⁶ These disparities can directly impact the quality of training provided to MNS postgraduates and may obstruct the achievement of teaching objectives. Numerous scholars have conducted research on the teaching abilities of clinical teachers working with MNS postgraduates. However, existing studies primarily focus on either student or clinic perspectives. Some investigations have explored nursing students' expectations prior to their clinical internships from their viewpoint,¹⁷ aiming to gain insight into their genuine needs. Nevertheless, due to voluntary participation in these studies, data were collected predominantly from more proactive students, rendering it challenging to generalize findings across all student populations. A study conducted by Robyn Cant examined nursing students' satisfaction with their internship experiences. While overall evaluations regarding both experiences and satisfaction levels were positive, further exploration is warranted. Additionally, social desirability bias may be present within this research context, complicating efforts to accurately represent student experiences.¹⁸ A cross-sectional study in Ethiopia revealed that nursing educators often lack the necessary competencies to fulfill essential teaching roles, resulting in subpar educational quality.¹⁹ Furthermore, studies have investigated nursing students' perspectives on the attributes of effective clinical teachers, indicating that those who possess strong interpersonal skills and clinical expertise are more favored during the teaching process.²⁰ There is a lack of research focused on the competencies of clinical teachers in MNS postgraduate education. Therefore, it is crucial to investigate the teaching competencies of

clinical teachers in MNS postgraduate programs to gain a comprehensive understanding of the current state of clinical teaching. By collecting the perceptions of clinical educators regarding postgraduate training in MNS, this study was able to better identify the essential competencies needed for effective teaching, ultimately informing improvements in clinical teaching and the overall quality of postgraduate education.

Clinical practice represents a structured and organized form of educational activity. Graduate students pursuing a Master of Nursing degree engage in defined clinical nursing practice environments as part of their studies; these environments have specific objectives and timelines. Moreover, universities impose certain requirements related to the clinical practices of these graduate students. Consequently, the implementation of students' clinical practice plans along with adherence to fundamental teaching standards in clinical settings serves as indicators—to some extent—of the instructional capabilities of clinical educators. Despite this significance, previous research has addressed these dimensions only minimally. There is a notable lack of research regarding the competencies of clinical instructors for MNS postgraduates, particularly from the perspective of postgraduate practical management. Consequently, this study employs a questionnaire survey method to derive insights into the actual implementation of clinical teaching for MNS postgraduates and to evaluate the pedagogical capabilities of clinical educators. This study aimed to collect and analyze the perceptions of clinical teachers regarding the development of postgraduate education in MNS within the context of postgraduate practical training management. The primary objectives were to assess the current status of clinical instructors' teaching competencies, evaluate the reasonableness of the criteria for selecting clinical teachers, and identify the various factors influencing teaching effectiveness. By analyzing these aspects, this study seeks to provide valuable insights into how to enhance the clinical teaching of incoming MNS postgraduates, identify key teaching competencies, and promote the overall development of MNS postgraduate education.

2. Methods

2.1. Study design

A cross-sectional study.

2.2. Setting and participants

The target population consisted of clinical teachers employed at 3 clinical practice institutions within the MNS system located in Zhengzhou, all classified as

Grade A tertiary hospitals. The inclusion criteria for participants were as follows: (a) possess a bachelor's degree in Nursing or higher; (b) have >5 years of professional experience in their respective specialty; (c) hold a specialist nurse certificate obtained within the past 3 years or have completed continuous education for >6 months at a nationally reputable medical institution; (d) have supervised clinical practice involving at least 3 nursing undergraduates; and (e) provide informed consent to participate in this study. The exclusion criteria included: (a) clinical teachers who were absent due to sick leave or personal leave during the data collection period; and (b) those who attended academic conferences, engaged in continuous education programs, or had been transferred from clinical nursing positions.

2.3. Data collection

The data were collected between July and August 2023. The researchers developed an online questionnaire and distributed the link to nursing staff across 3 hospitals. Clinical educators from these hospitals received the questionnaire link and were encouraged by their respective nursing department staff to complete it. Participation in the questionnaire is anonymous; when a participant begins to fill out the online survey, this action constitutes informed consent for participation in this study. An established sequential response mechanism for the online questionnaires includes a breakpoint, allowing each ID to submit responses only once. Upon completion of data collection, researchers exported the original Excel file from the questionnaire platform. Two researchers reviewed all collected data, excluding questionnaires with a response time <3 min or those displaying logical inconsistencies.

2.4. Instruments

2.4.1. The general information questionnaire

The General Information Questionnaire was self-compiled by the researchers and encompasses demographic characteristics such as gender, age, highest academic qualification, and professional technical title.

2.4.2. Survey on cultivation cognition for Master of Nursing Specialist postgraduate

The survey assessing cognition regarding professional degrees employs the "Survey on Cultivation Cognition of Postgraduate Students Pursuing a Master of Nursing Specialist Degree," which was also self-compiled by the researchers based on the findings of Tan et al.,²¹ Li and Han,²² on the training of nursing master's degree students.

This section consists of 10 items. Since confidence analyses are usually used to assess consistency between multiple entries, and each option in entry 15 represents a separate category rather than a continuous variable, it was not suitable for a test of the Cronbach's alpha. Therefore, the choice was made to exclude the entry from the test. The Cronbach's alpha for the test of the remaining entries of the instrument was averagely 0.695.

2.4.3. Clinical nursing teachers' core competence evaluation scale

The Clinical Nursing Teachers' Core Competence Evaluation Scale was developed by Hou et al.²³ for assessing the core competencies of clinical nursing teachers. This scale comprises 26 items across 4 dimensions: leadership (8 items), problem-solving ability (7 items), educational and teaching capacity (8 items), and professional capacity (3 items). Each item is rated on a 5-point Likert scale, where 1 indicates *very poor possession* and 5 denotes *very strong possession*. Higher scores reflect greater levels of core teaching abilities. The Cronbach's alpha coefficient for this scale is reported to be 0.91, demonstrating its good reliability and validity after rigorous testing.

2.4.4. Survey on clinical teacher's implementation in Master of Nursing Specialist clinical practice

The questionnaire was constructed based on the clearly defined responsibilities of clinical educators and related management requirements as outlined in the regulations concerning the clinical practice component for Master of Nursing Specialist postgraduates at Zhengzhou University's School of Nursing and Health.²⁴

2.5. Ethical considerations

This research was conducted as part of routine postgraduate education administration activities, ensuring that faculty members did not face any disadvantages during the process. Participant identities were treated with strict confidentiality, and all assessments were analyzed anonymously.

2.6. Data analysis

The data collected from the questionnaires were extracted from the online platform's database and subsequently analyzed using IBM SPSS version 27.0. The raw survey data were exported from Questionnaire Web, and its completeness was verified by 2 researchers. Descriptive statistics were employed to analyze the participants' general characteristics. Continuous data were summarized using the mean (M) and standard

deviation (SD) if they followed a normal distribution; otherwise, they were represented by the median (Mdn) and interquartile range (IQR). Categorical data were presented in terms of frequency and percentage.

3. Results

3.1. General information about clinical teacher

A total of 143 clinical teachers participated in the online questionnaire study, including 42 with a master's degree and 101 with a bachelor's degree. Of these participants, there were 5 males (3.50%) and 138 females (96.50%). The distribution of professional titles and age demographics is as follows: 71 Nurse Supervisors (49.7%), aged between 32 years and 45 years; 62 Deputy Directors of Nursing (43.4%), aged between 35 years and 56 years; and 10 Directors of Nursing (6.99%), aged between 45 years and 55 years. The teaching experience among postgraduate instructors varied significantly, ranging from 0 year to 30 years, with an average number of 6 MNS postgraduates taught per clinical teacher reported across the board. Notably, most clinical teachers demonstrated robust research capabilities, with >90% having published articles as first authors in academic journals. All clinical teachers possess >5 years of specialty practice experience (Table 1).

3.2. The overall perception of clinical teachers toward the cultivation of MNS postgraduates

Understanding the Distinction Between "Academic-Oriented" and "Professionally Oriented" Postgraduates: A significant majority of clinical teachers (>95.8%) grasp the distinction between academic-oriented and professionally oriented postgraduates (Q12), with only 4.2% demonstrating a complete lack of understanding regarding these differences. Nonetheless, their level of comprehension varies; only 14.7% possess an in-depth knowledge of both degree types (Q13). Furthermore, most clinical teachers recognize that distinct teaching methods are necessary for each category (Q18).

Perceptions Regarding the Cultivation of MNS Postgraduates: An overwhelming number of clinical teachers advocate for the cultivation of MNS postgraduates as applied talents, specialized professionals, and composite expertise individuals (Q14). These educators place a higher emphasis on developing MNS postgraduates within various specialty areas in clinical practice (Q15). Additionally, most clinical teachers demonstrate a reasonable understanding concerning the essential competencies that MNS postgraduates should acquire in

Variable and categories	N	%
Q1: Gender		
Male	5	3.50
Female	138	96.50
Q2: Age (years old)		
32–40	87	12.60
41–48	38	2.70
49–56	18	1.30
Q3: Highest level of education		
Master's Degree	42	29.40
Bachelor's Degree	101	70.60
Q4: Professional and technical title		
Directors of Nursing	10	6.99
Deputy Directors of Nursing	62	43.40
Nurse Supervisors	71	49.70
Nurse Practitioner	0	0.00
Q5: Position		
No	64	44.80
Yes	79	55.20
Q6: Years of experience in nursing work		
6–10	13	9.10
11–20	83	58.00
21–30	31	21.70
31–38	16	11.20
Q7: Years of undergraduate teaching		
0–10	59	41.30
11–20	74	51.80
23–32	10	7.00
Q8: Years of postgraduate teaching		
0–5	109	76.20
6–10	28	19.60
13–30	6	4.20
Q9: Number of MNS postgraduates taught		
0–10	122	85.30
11–20	16	11.20
22–40	5	3.50
Q10: Research experience (multiple-choice question)		
Independently applied for and obtained approval for projects	50	35.00
Participated in the implementation of research projects as a collaborator	77	54.00
Published articles as the first author	129	90.20
Contributed to articles as a collaborator	119	83.20
Independently applied for patents or software copyright registrations and obtained authorization	94	65.70
Participated in the application for patents or software copyright registrations as a collaborator	72	50.40

(Continued)

Variable and categories	N	%
Q11: Specialty practice experience (multiple-choice question)		
Obtained an international specialist nurse certificate	9	6.30
A specialist nurse training certificate from the Chinese Nursing Association	59	41.20
A provincial specialist nurse training certificate	86	60.10
Undergone training for ≥3 months at a leading domestically renowned medical institution in the specialist field	46	32.10
Won awards in provincial-level or higher specialist skills competitions	22	15.40
Awards in specialist skills competitions organized by academic groups and participated by contestants nationwide	31	21.70

Table 1. General information on clinical teachers for MNS postgraduates (N = 143).

terms of clinical practice abilities (Q16), agreeing that evidence-based nursing practices, technical skills, and health education should be prioritized during their training—each exceeding 80% consensus (Q17).

Clinical Teachers' Understanding Related to Teaching MNS Postgraduates: The majority of educators exhibit familiarity with effective teaching methods as well as relevant knowledge and content aimed at instructing MNS postgraduates—from Q19 to Q21—as presented in Table 2.

3.3. Implementation of clinical teachers in MNS clinical practice

There are notable deficiencies in the contact and communication between mentors and clinical practice departments, with only 39% of mentors actively maintaining such interactions (Q48). Postgraduate students exhibit irregularities and delays in their presentations (Q49), although most demonstrate a tendency to consult their mentors regarding examination arrangements and content. Furthermore, a majority of postgraduates adhere strictly to the leave application and cancellation systems established by hospitals and educational institutions (Q51) (Table 3).

3.4. Core competencies of clinical teachers

Clinical teachers possess specific core competencies. The findings presented in Table 4 indicate that clinical teachers scored higher 5.00 (4.00, 5.00) on items Q25, Q33, Q34, Q35, Q36, Q40, Q41, and Q43; conversely, they received slightly lower scores 4.00 (3.00, 4.00) on items Q23 and Q37.

Variable and categories	N	%
<i>Q12: Are you aware that there is a distinction between "academic" and "professional degree" programs in nursing graduate education?</i>		
Understand	137	95.80
Do not understand	6	4.20
<i>Q13: Do you understand the differences between "academic" and "professional degree" programs in nursing graduate education?</i>		
Have a good understanding	21	14.70
Understand	86	60.10
Have limited understanding	34	23.80
Do not understand	2	1.40
<i>Q14: Are you currently aware of the training objectives for MNS postgraduates (multiple-choice question)?</i>		
Research talents	96	67.10
Applied talents	109	76.20
Specialized talents	108	75.50
Composite talents	108	75.50
Do not understand	4	2.80
<i>Q15: What you believe that the training of MNS postgraduates should follow?</i>		
Cultivate talents for popular nursing positions	6	4.20
Cultivate talents for clinical nursing specialties with strong technical skills	31	21.70
Cultivate talents for nursing specialties based on the most urgent clinical needs	44	30.80
Each clinical specialty can be cultivated	61	42.70
Others (technical operation basic theory health education evidence-based nursing)	1	0.70
<i>Q16: Do you understand the clinical practice abilities that MNS postgraduates should possess?</i>		
Have a good understanding	19	13.30
Understand	97	67.80
Have limited understanding	27	18.90
Do not understand	0	0.00
<i>Q17: What do you consider the focus of clinical practice training for MNS postgraduates (multiple-choice question)?</i>		
Technical operation	119	83.20
Basic theory	103	72.00
Health education	116	81.10
Evidence-based nursing	134	93.70
<i>Q18: Do you think the clinical teaching methods for MNS postgraduates and scientific degrees in nursing are the same?</i>		
Identical	18	12.60
Different	125	87.40

(Continued)

Variable and categories	N	%
<i>Q19: Do you understand the teaching methods for MNS postgraduates?</i>		
Have a good understanding	14	9.80
Understand	99	69.20
Have limited understanding	29	20.30
Do not understand	1	0.70
<i>Q20: Do you understand the knowledge that teachers should possess for teaching MNS postgraduates?</i>		
Have a good understanding	17	11.90
Understand	101	70.60
Have limited understanding	24	16.80
Do not understand	1	0.70
<i>Q21: Do you understand the content of clinical teaching for MNS postgraduates?</i>		
Have a good understanding	19	13.30
Understand	103	72.00
Have limited understanding	21	14.70
Do not understand	0	0.00

Table 2. Cognition of the cultivation of MNS postgraduates (N = 143).

3.5. Analysis of the correlation between core competencies and general characteristics of clinical teachers

A correlation analysis was conducted to investigate the relationship between the general characteristics and core competencies of clinical teachers, utilizing a method that compares averages. In this study, the core competency scores of clinical teachers served as the dependent variable, while their general characteristics were treated as independent variables. The independent variables were assigned numerical values for analysis, with the details presented in Table 5. The findings reported in Table 6 indicated that the general characteristics of clinical teachers did not exert a significant impact on their core competencies ($P > 0.05$). Additionally, a correlation analysis examining research experience and specialized practice experience against core competencies revealed a positive correlation; however, this association was relatively weak. Moreover, statistical significance concerning these correlations with core competencies also did not reach significance ($P > 0.05$), as shown in Table 6.

4. Discussion

This study evaluated the effectiveness of clinical teaching by gathering insights from clinical teachers regarding the cultivation of MNS postgraduates within the framework of postgraduate practical training management. It aimed to

Variable and categories	N	%	Variable	Mdn (Q ₂₅ , Q ₇₅)
<i>Q48: Before the postgraduates come to my department for practice, their mentors contact me to communicate about the content of the graduate practice plan and tasks</i>			Q22: Possess general knowledge of pedagogy and psychology	4.00 (3.00, 5.00)
All the postgraduates' mentors have been contacted	29	20.20	Q23: Have a grasp of scientific development trends and research hotspots	4.00 (3.00, 4.00)
The mentors of most postgraduates have been contacted	56	39.20	Q24: Have an understanding of one's own knowledge and abilities	4.00 (4.00, 5.00)
Uncertain	22	15.40	Q25: Have a passion for clinical teaching and clinical work	5.00 (4.00, 5.00)
The mentors of a very small number of postgraduates have been contacted	23	16.10	Q26: Ability to judge students' psychology and predict their behavior	4.00 (4.00, 5.00)
No postgraduates' mentors have been contacted	13	9.10	Q27: Expression ability (verbal and non-verbal)	4.00 (4.00, 5.00)
<i>Q49: How does the postgraduates submit their clinical practice plan?</i>			Q28: Flexibility and diversity in educational formats	4.00 (4.00, 5.00)
It was presented to me before the postgraduates came to my department for practice	47	32.90	Q29: Vitality and attractiveness in lectures	4.00 (4.00, 5.00)
It was immediately presented upon the postgraduates' reporting to my department	62	43.40	Q30: Ability to teach according to different clinical scenarios	4.00 (4.00, 5.00)
Uncertain	18	12.60	Q31: Ability to handle unexpected teaching situations	4.00 (4.00, 5.00)
After my prompt and request, it was presented to me	12	8.40	Q32: Ability to create a relaxed and comfortable teaching environment and atmosphere	4.00 (4.00, 5.00)
Never present	4	2.80	Q33: Level of clinical operation skills	5.00 (4.00, 5.00)
<i>Q50: The arrangement and examination process for postgraduate students' departmental exit exams are as follows?</i>			Q34: Ability to assess patient conditions and make appropriate judgments and treatments	5.00 (4.00, 5.00)
All postgraduates consulted with their dual mentors in advance regarding the exam time, and the dual mentors attended the students' departmental exit exams.	46	32.20	Q35: Serving as a role model for students in the nurse role	5.00 (4.00, 5.00)
Most postgraduates consulted with their dual mentors in advance regarding the exam time, and most of the dual mentors attended the students' departmental exit exams	42	29.40	Q36: Demonstrating the thought process and clinical decision-making for students	5.00 (4.00, 5.00)
Uncertain	24	16.80	Q37: Research capabilities	4.00 (3.00, 4.00)
A small number of postgraduates consulted with their dual mentors in advance regarding the exam time, and a few of the dual mentors (or one mentors) attended the students' departmental exit exams	18	12.60	Q38: Familiarity with organizing and managing teaching and clinical activities	4.00 (4.00, 5.00)
No postgraduates consulted with their dual mentors regarding the exam time, and no mentors attended the students' departmental exit exams.	13	9.10	Q39: Ability to plan and efficiently arrange practical training activities	4.00 (4.00, 5.00)
<i>Q51: The situation regarding postgraduates' compliance with the leave application and cancelation system is as follows:</i>			Q40: Interpersonal relationships and cooperation	5.00 (4.00, 5.00)
All postgraduates are able to comply	108	75.50	Q41: Methods for correcting students' errors	5.00 (4.00, 5.00)
Most postgraduates are able to comply	26	18.20	Q42: Helping students cope with stress and control emotions	4.00 (4.00, 5.00)
Uncertain	7	4.90	Q43: Encouraging independent thinking and innovative thinking	5.00 (4.00, 5.00)
A small number of postgraduates are able to comply	2	1.40	Q44: Evaluating one's own behavior, reflecting on teaching, and summarizing experience	4.00 (4.00, 5.00)
No postgraduates are able to comply	0	0.00	Q45: Ability to analyze and synthesize various types of information to solve problems	4.00 (4.00, 5.00)
			Q46: Self-regulation	4.00 (4.00, 5.00)
			Q47: Self-learning and self-improvement	4.00 (4.00, 5.00)

Note: Mdn, median.

Table 3. Survey form for the implementation status of clinical teachers of MNS postgraduates.**Table 4.** Core competencies of clinical teachers for MNS postgraduates Mdn (Q₂₅, Q₇₅).

Independent variable	Assignment of values
Gender	Male = 1, Female = 2
Age (years)	≤35 = 1, 36–45 = 2, ≥46 = 3
Highest level of education	Bachelor's Degree = 1, Master's Degree = 2
Professional and technical title	Directors of Nursing = 1, Nurse Supervisors = 2, Deputy Directors of Nursing = 3
Position	Yes = 1, No = 2
Years of undergraduate teaching	≤10 = 1, 11–20 = 2, ≥21 = 3
Years of postgraduate teaching	≤5 = 1, 6–10 = 2, ≥11 = 3
Number of MNS postgraduates	≤10 = 1, 11–20 = 2, ≥21 = 3

Table 5. Independent variable assignments.

identify various factors that influence teaching effectiveness, thereby facilitating a more accurate assessment of the essential competencies required for clinical educators. Furthermore, it examined the rationale behind the selection criteria for clinical teachers. A questionnaire survey method was employed to capture clinical teachers' perceptions concerning MNS postgraduate training from a curriculum management perspective and to assess their teaching competencies. This study provides valuable evidence for enhancing the pedagogical capabilities of clinical instructors and advancing the development of MNS postgraduate training programs. Clinical teachers play a crucial role in training MNS postgraduates and serve as key contributors to cultivating high-quality graduates.²⁵ The teaching capabilities of clinical instructors significantly influence the clinical learning experiences of MNS postgraduates. However, existing research primarily concentrates on students' perspectives, assessing the efficacy of clinical instruction through their experiences and examining factors that affect the teaching competencies of clinical educators. Investigating the effectiveness of clinical teaching for MNS postgraduates solely from student and practical application viewpoints is insufficient; it is imperative to conduct an in-depth analysis considering practice management perspectives.

This study confirms that a substantial majority of clinical teachers can distinctly identify the training objectives associated with academic versus professional postgraduate degrees, although few possess an in-depth understanding of these 2 categories. This gap may be attributable to the relatively recent establishment of professional master's education within our country and a limited comprehension among clinical teachers regarding the specialized training required for MNS postgraduates.²⁶ Furthermore, this finding indicates that the training framework for MNS postgraduates remains largely exploratory at this stage.²⁷ Given these considerations, it is essential to gain insight into how clinical educators

Categories	Mean	N	F	P	r
<i>Gender</i>			1.471	0.227	
Male	4.59	5			
Female	4.25	138			
<i>Age (years)</i>			0.514	0.599	
≤35	4.34	19			
36–45	4.23	97			
≥46	4.34	27			
<i>Highest level of education</i>			0.889	0.347	
Bachelor's Degree	4.23	101			
Master's Degree	4.34	42			
<i>Professional and technical title</i>			2.019	0.137	
Directors of Nursing	4.63	10			
Nurse Supervisors	4.21	71			
Deputy Directors of Nursing	4.26	62			
<i>Position</i>			1.702	0.194	
Yes	4.32	79			
No	4.19	64			
<i>Years of experience in nursing work</i>			0.182	0.834	
≤10	4.18	13			
11–20	4.26	83			
≥21	4.3	47			
<i>Years of undergraduate teaching</i>			0.005	0.995	
≤10	4.26	59			
11–20	4.26	74			
≥21	4.28	10			
<i>Years of postgraduate teaching</i>			0.267	0.766	
≤5	4.27	137			
6–10	4.1	5			
≥11	4	1			
<i>Number of MNS postgraduates</i>			0.584	0.559	
≤10	4.24	122			
11–20	4.4	16			
≥21	4.38	5			
<i>Research experience</i>	3.78	143		0.116	0.132
<i>Specialty practice experience</i>	1.76	143		0.633	0.04

Table 6. Analysis of the correlation between core competencies and general information about clinical teachers.

perceive postgraduate training in nursing science as well as their foundational teaching competencies.

In this study, we analyzed the general information of clinical teachers as a factor influencing their core

competencies. The demographic characteristics, work experience, and teaching experience were found to be unrelated to their teaching abilities. This finding aligns with a cross-sectional study conducted by Rasi et al.²⁸ Correlation analysis revealed that the research experience and specialized practice experience of clinical teachers exhibited weak correlations with their core competencies, which were not statistically significant. This suggests that the development of core competencies is affected by multiple factors rather than being solely contingent on research or specialized practice experiences.

In our survey of the core competencies of clinical teachers, participants demonstrated high scores in areas related to clinical procedural skills, assessing patient conditions, making appropriate judgments and interventions, as well as demonstrating the thought processes and steps involved in clinical decision-making to students. These results may indicate that clinical teachers possess robust professional knowledge and are capable of effectively guiding MNS postgraduates in practical settings. Conversely, their scores were lower on items related to understanding trends in scientific development and identifying current research hotspots. This may be attributed to the fact that clinical educators have predominantly focused on clinical practice capabilities due to their extensive engagement in clinical work, often at the expense of developing research skills. Additionally, clinical educators typically bear significant responsibilities associated with both clinical nursing tasks and teaching duties, which further limits their availability for engaging in research activities.²⁹ This observation corroborates findings from Wang et al.,¹⁶ indicating that MNS postgraduate clinical teachers exhibit relatively limited research capabilities. Consequently, it is essential to rigorously control the selection criteria and evaluation procedures for clinical teachers while placing greater emphasis on enhancing their research capabilities. Current research primarily focuses on developing core competency assessment tools for clinical teachers, while studies on how to enhance clinical teachers' research capabilities are relatively limited. Future research could improve the research abilities of teaching faculty by further exploring and refining training programs for clinical teachers. A key focus of these training programs could be helping teaching faculty master basic research methods and skills, as well as enhancing their research thinking and innovative abilities. Additionally, it is recommended to encourage clinical teachers to participate in academic conferences both domestically and internationally to stay updated on the latest research trends. Meanwhile, clinical practice departments should also provide more research opportunities and resources to improve the research capabilities of clinical teachers.

This study revealed that only 39% of supervisors were able to maintain effective communication with clinical practice departments. Graduate supervisors typically bear a substantial workload encompassing both teaching and research, while clinical educators concentrate on clinical nursing and instructional responsibilities. As a result, both parties are often preoccupied with their respective duties, making it challenging to find mutually available time for dialog. Furthermore, some supervisors may possess extensive experience in theoretical research but lack practical clinical exposure, which limits their understanding of the operations and needs of clinical practice departments.³⁰ This gap contributes to communication barriers between the 2 groups. Additionally, this issue may stem from an inadequate comprehension of the training framework for Master of Nursing Science (MNS) students by both supervisors and clinical educators. They might not fully appreciate the significance of clinical practice in preparing MNS students and consequently exhibit a lack of initiative and motivation to engage in meaningful communication.³¹ This indicates a significant insufficiency in communication and collaboration between the supervisors of MNS postgraduates and the clinical teachers. The lack of effective dialog may adversely impact the guidance and support provided to MNS postgraduates during their clinical practice, subsequently influencing their development of clinical skills and professional growth. Therefore, enhancing communication and cooperation between supervisors and clinical practice departments emerges as an urgent issue that necessitates immediate attention. Furthermore, the performance of MNS postgraduates during their clinical practice also deserves careful consideration. The study revealed that only 32.9% of MNS postgraduates had presented their clinical practice plans to the respective clinical instructors prior to commencing their departmental practices. This phenomenon indicates a deficiency in self-management skills and proactivity among MNS graduate students. Such shortcomings may be linked to their future career aspirations, as they tend to favor roles as nursing educators over practicing nurses upon graduation.³² These circumstances not only undermine the efficiency and quality of clinical practice but also highlight the urgent need for further investigation into strategies aimed at enhancing self-management capabilities and proactivity within this cohort. Additionally, this issue may stem from an incomplete framework within the clinical practice department for managing the clinical learning experiences of MNS postgraduates.³³ It is imperative for clinical practice departments to deepen their understanding of MNS postgraduate training, establish a robust management mechanism, and promote enhancements in the quality of clinical teaching.

5. Conclusions

This study aimed to evaluate the current teaching competencies of clinical educators through a comprehensive questionnaire survey. It identified the factors influencing teaching effectiveness and assessed the appropriateness of teacher selection criteria. Ultimately, this research sought to delineate the core competencies required of clinical teachers within the MNS postgraduate training framework, with the objective of effectively enhancing the quality of MNS postgraduate education. The results indicate that there is no significant relationship between the demographic information of clinical teachers and their core competencies. Moreover, clinical teachers exhibit relatively weak research capabilities as well as inadequate awareness regarding trends in scientific development and emerging research hotspots. Communication and collaboration between MNS postgraduate supervisors and clinical educators are also insufficient. The specialized Master's education landscape in our country still presents substantial opportunities for growth. Clinical teachers predominantly consist of senior nurses with extensive practical experience coupled with strong professional abilities that contribute positively to developing MNS postgraduates' practical skills; however, there remains a lack of deep understanding concerning their roles throughout the training process. Additionally, efforts must be made to enhance their research capabilities moving forward. Future initiatives should aim to establish more scientific and standardized criteria for selecting clinical educators.

Limitations

This study has several limitations. The participants were clinical teachers recruited from 3 clinical practice

institutions within the same region, resulting in a relatively narrow scope for sample selection. Consequently, this study does not represent the entirety of clinical teachers, and the generalizability of the findings is limited. Furthermore, the inclusion criteria for participants in this study were stringent; specifically, they required >5 years of work experience in their specialty, possession of a specialist nurse qualification certificate obtained within the past 3 years, or completion of >6 months of continuing education at a nationally recognized medical institution. While such rigorous inclusion criteria can enhance participant quality and ensure the professionalism of clinical educators, they may also lead to the exclusion of some clinically experienced teachers who do not meet specific conditions—thereby restricting sample diversity.

Authors contributions

Li YS: Validation, Investigation, Formal analysis, Data Curation, Writing-Original Draft. Wang JJ: Conceptualization, Methodology, Validation, Investigation, Writing-Original Draft, Review & Editing, Supervision. Guo RR: Validation, Writing-Review & Editing, Shi Y: Validation, Investigation, Writing-review. Liu NN: Validation, Investigation, Writing-review. Liu QQ: Validation, Writing-review.

Ethical approval

Ethical issues are not involved in this paper.

Conflicts of interest

All contributing authors declare no conflicts of interest.

References

1. World Health Organization. Nurse educator core competencies 2016. <https://www.who.int/publications/i/item/nurse-educator-core-competencies>. Accessed February 20, 2025.
2. Hole GO, Brenna SJ, Graverholt B, Ciliska D, Nortvedt MW. Educating change agents: a qualitative descriptive study of graduates of a master's program in evidence-based practice. *BMC Med Educ*. 2016;16:71.
3. van Wyngaarden A, Leech R, Coetzee I. Challenges nurse educators experience with development of student nurses' clinical reasoning skills. *Nurse Educ Pract*. 2019;40:102623.
4. Ministry of Education of the People's Republic of China. Notice of the state council academic degrees committee on printing and distributing the establishment plan for 19 types of professional degrees, including master of finance 2010. http://www.moe.gov.cn/srcsite/A22/moe_833/201005/t20100513_92739.html. Accessed February 20, 2025.
5. Xu H, Dong C, Yang Y, Sun H. Developing a professional competence framework for the master of nursing specialist degree program in China: a modified Delphi study. *Nurse Educ Today*. 2022;118:105524.
6. Song C, Yao L, Song Y, Liu L. The hotspots and trends of nursing master's education in China: a

- bibliometric analysis from 2000 to 2022. *BMC Med Educ*. 2024;24:1082.
7. Wang M, Xu JO, Luo CF, Lv F, Wei LZ. Qualitative comparative analysis of learning engagement among Chinese part-time master's students in nursing. *Nurse Educ Today*. 2024;138:106194.
 8. Lemetti T, Pakarinen A, Salminen L, Virtanen H, Haapa T. Instruments assessing nurse educator's competence: a scoping review. *Nurs Open*. 2022;10:1985.
 9. Zeng L, Chen Q, Fan S, et al. Factors influencing the professional identity of nursing interns: a cross-sectional study. *BMC Nurs*. 2022;21:200.
 10. Pu AL, Luo Y. Current status and insights of teaching research competence training for master's degree nursing students. *J Nurs (China)*. 2023;30:35–39 (in Chinese).
 11. Yang QJ, Huang RR. Current status of the educational model of the master's degree in nursing. *Chin Nurs Res*. 2018;32:3370–3372 (in Chinese).
 12. McKenna L, Sommers CL, Rachmawaty R, et al. Postgraduate nurse education in Indonesia and Australia: a comparative analysis. *Nurse Educ Today*. 2023;131:105954.
 13. Powers K, Herron EK, Pagel J. Nurse preceptor role in new graduate nurses' transition to Practice. *Dimens Crit Care Nurs*. 2019;38:131–136.
 14. Zhang C, Xu C, Wang R, Han X, Yang G, Liu Y. The learning experiences and career development expectations of Chinese nursing master's degree students: a qualitative investigation. *Nurse Educ Pract*. 2024;77:103996.
 15. Ibrahim R, Varghese M, Salim SS. A cross-sectional study on nursing preceptors' perspectives about preceptorship and organizational support. *SAGE Open Nurs*. 2024;10:23779608241288756.
 16. Wang X, Zhao L, Hu H, Ou G, Liao L. Competence of clinical teachers: a survey on perception of masters of nursing specialist postgraduates, their clinical teachers, and head nurses. *Int J Nurs Sci*. 2017;4:158–163.
 17. Soler OM, Aguayo-González M, Gutiérrez SSR, Pera MJ, Leyva-Moral JM. Nursing students' expectations of their first clinical placement: a qualitative study. *Nurse Educ Today*. 2021;98:104736.
 18. Cant R, Ryan C, Cooper S. Nursing students' evaluation of clinical practice placements using the clinical learning environment, supervision and nurse teacher scale – A systematic review. *Nurse Educ Today*. 2021;104:104983.
 19. Dejene D, Stekelenburg J, Versluis M, Ayalew F, Molla Y. Assessment of core teaching competency of health professional educators in Ethiopia: an institution-based cross-sectional study. *BMJ Open*. 2022;12:e059502.
 20. Labrague LJ, McEnroe-Petitte DM, D'Souza MS, Hammad KS, Hayudini JNA. Nursing faculty teaching characteristics as perceived by nursing students: an integrative review. *Scand J Caring Sci*. 2020;34:23–33.
 21. Tan J, Zhu JC, Lu F. Study on the master of nursing specialist construction in China. *China High Med Educ*. 2011;4:110–111 (in Chinese).
 22. Li F, Han J. Thinking on training of master degree postgraduate in clinical nursing profession. *Chin Nurs Res*. 2010;24:266–267 (in Chinese).
 23. Hou XJ, Zhu D, Jiang XL. Constructing an evaluation model for core competence of clinical nursing teachers. *Chin J Evid Based Med*. 2005;11:20–26 (in Chinese).
 24. Wang JJ, Shi Y, Liu NN, Liu QQ, Wang JW. Evaluation and analysis of clinical practice management work of Master of Nursing Specialist postgraduates. *Chin Gen Pract Nurs*. 2023;21:1125–1129 (in Chinese).
 25. Zhang J, Zhou F, Jiang J, Duan X, Yang X. Effective teaching behaviors of clinical nursing teachers: a qualitative meta-synthesis. *Front Public Health*. 2022;10:883204.
 26. Jiang H, Zhang T, Zhang S, Ma H, Luo Y. Nursing postgraduates learning experience of professional curriculum in China: a qualitative study. *Nurs Open*. 2024;11:e2244.
 27. Skela-Savič B. Nursing development should now become a priority for health systems in Europe. *Zdr Varst*. 2023;62:162.
 28. Rasi M, Hanssen TA, Norbye B, Mikkonen K, Kvande ME. Critical care nurses' competence in mentoring students in intensive care units—A cross-sectional study. *Nurse Educ Today*. 2024;141:106322.
 29. Kim KH, Shin S. Factors influencing preceptor nurses' clinical teaching behavior: a cross-sectional study. *Nurse Educ Today*. 2025;146:106555.
 30. Asegid A, Geda B, Yigzaw T, Yadeta TA, Assefa N. Clinical skill competency of nurse educators in Ethiopia: a cross-sectional observational study. *Teach Learn Nurs*. 2023;18:e46–e51.
 31. Salminen L, Minna S, Sanna K, Jouko K, Helena L-K. The competence and the cooperation of nurse educators. *Nurse Educ Today*. 2013;33:1376–1381.
 32. Wang J, Guo R, Liu M, et al. Career decision-making self-efficacy and professional commitment among master nursing students. *West J Nurs Res*. 2018;40:327–345.
 33. Hall-Lord ML, Theander K, Athlin E. A clinical supervision model in bachelor nursing education – Purpose, content and evaluation. *Nurse Educ Pract*. 2013;13:506–511.