Study on the Evaluation Index System and Training Method of Master of Nursing Specialists Graduate Students’ Clinical Practice Ability

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Abstract: To understand the clinical practice ability index system and training program of Master of Nursing Specialists (MNS) at home and abroad. We search the relevant literature and the websites of relevant nursing colleges, and summarize the relevant contents of clinical practice ability training of MNS through literature analysis and case study. The cultivation of clinical practice ability of Master of Nursing Specialists at home and abroad includes clinical practice ability evaluation index, clinical practice time, clinical practice content, teaching methods and assessment methods. In the training process of MNS clinical practice ability, the formulation of practice content and time does not reflect the characteristics of the MNS, and the assessment method lacks objectivity. This paper summarizes the clinical practice ability index system and MNS training model at home and abroad, aiming to provide reference for each practice base to develop systematic and reasonable clinical practice program, so as to promote the development of MNS clinical practice ability and meet the needs of clinical nursing.

Keywords: Master of Nursing Specialists; Clinical Practice Ability; Training Mode Teaching Methods

1. Introduction
In order to meet the economic development of our country and the growing health needs of the people, further improve the nursing talent training system, innovate the nursing talent training mode, and constantly improve the quality of nursing talent training, The State Council approved the establishment of Master of Nursing Specialist. Since the first admissions in 2011, the scholars of nursing master's degree graduate training actively explored, although the colleges and universities gradually attention and increasingly improve the MNS clinical practice ability training mechanism, but the practice base has not yet formed a unified, perfect clinical practice plan, the clinical practice ability, practice time, practice content, teaching form, assessment methods are big differences, and clinical practice fails to reflect the personalized cultivation of MNS. This paper summarizes the clinical practice ability index system and MNS training model at home and abroad, aiming to provide reference for each practice base to develop systematic and reasonable clinical practice program, so as to promote the development of MNS clinical practice ability and meet the needs of clinical nursing.

2. Related Concepts
2.1 Master of Nursing Specialists
In 2008, the School of Nursing of Peking University and the School of Nursing of Fudan University took the lead in starting the training of professional nursing postgraduates. In 2011, a total of 28 colleges and universities in China enrolled MNS graduate students. In the same year, the Graduate Education Steering Committee was established in Beijing, which greatly promoted the development of graduate education for Master of Nursing Specialists in China. MNS is relative to the nursing science degree degree type, its goal is to cultivate good political thought quality and professional ethics accomplishment, with the basis of the solid theory and the system of professional knowledge, strong clinical analysis and thinking ability, can
independently solve the common nursing problems in the field of this discipline, and has a strong research and teaching ability of high-level, applied, specialized nursing talents. Its training mode is mainly in the form of clinical practice, supplemented by appropriate theoretical course learning and scientific research training. It has three basic attributes: practical, professional and comprehensive. It emphasizes the cultivation of practical ability and pays attention to the training of clinical thinking and skills. American nursing graduate training of orientation is to cultivate clinical nursing practitioners, the goal is to cultivate the specialized clinical practice practice nursing talents and nursing instructors, master can become a clinical nursing experts to improve clinical nursing quality, at the same time have clinical education ability, clinical scientific research ability of high-level nursing talents. In 1993, The American Association of Colleges of Nursing(AACN) put forward, The training of nursing postgraduates should be dedicated to training advanced practice nurses (APN), It has five main roles: Clinical nursing specialist (CNS), Business Opening Nurse (NP), Senior Anesthesia Nurse (CRNA), senior midwifery nurse (CNM) and the case managers (CM)[1]. There are scholars combined with the actual situation, gives different definitions, think MNS is for general and specialized nursing development needs, to cultivate solid professional practice ability, can be creative in general and specialized nursing practical work, with specialist nurse role required quality, knowledge and skills of applied professionals and set up a degree type[4]. MNS graduate education not only conforms to the needs of China's social development, but also is a major measure in line with the international graduate education.

2.2 Clinical Practice Ability and Nursing Clinical Practice Ability

Clinical practice ability, as a kind of professional practice ability, is the ability to transform the professional knowledge and thinking into clinical specific operations, and to find and solve patients' existing or potential problems in time. From the perspective of medical education, some scholars believe that clinical practice ability is to cultivate a satisfactory degree of knowledge and skills of clinical, interpersonal communication and other aspects in the process of education. Domestic higher medical education institute to define clinical ability for: successfully complete "patient-centered" activities of the potential psychological characteristics, embodied in the cognitive, attitude, skills three aspects also have scholars think clinical practice ability refers to skilled and reasonable communication, professional knowledge and skills, clinical thinking and professional ethics and emotional applied to clinical practice for the patient, community population service ability.

Domestic and foreign institutions and scholars have different understanding and definition of nursing clinical practice ability. In 2002, the British Nurses and Midwives Committee (NMC) proposed that nursing clinical practice ability is the ability for nurses to independently, effectively and safely complete clinical nursing practice without supervision. With the transformation of nursing mode, the concept of nursing clinical practice ability also changes dynamically. In 2010, NMC updated its concept, it defines as the comprehensive ability to ensure safe and effective nursing practice and intervention, including skills, knowledge, attitude and professional value [2]. The National League of Nursing (NLN)[3] believes that correct judgment, understanding and evidence-based care practices to provide excellent care to patients in different clinical care settings. Domestic researchers believe that nursing clinical practice ability is the physiological and psychological characteristics that is necessary for nursing staff to transform their knowledge and skills into solving practical clinical problems. Domestic scholars through the ability, practice ability and professional practice ability concept on the basis of theoretical research, the MNS clinical practice ability is defined, refers to the MNS graduate students in clinical nursing work, can guided by nursing theory and practical knowledge, health needs consider individual, family, community services,
effectively solve the nursing clinical or professional service category complex problems, and to provide economic, appropriate, high quality health services, the thought quality and action ability. Characteristic that are situational, dynamic, and evaluable. Some scholars have also defined the clinical ability of MNS graduate students as the effective combination of knowledge, attitude and skills of MNS graduate students in creatively completing the practical work of general practice and specialized nursing.

3. Clinical Practice Ability Index System of MNS
Clinical practice ability is the necessary foundation for MNS graduate students to become an advanced clinical practice nurse. In 2005, Hamrics\(^{[4]}\) study showed that among the seven core competencies that advanced practice nurses should have, "direct nursing practice competence" is the most important part. In 2003, the International Council of Nurses (ICN) put forward the guiding concept: nursing clinical practice ability refers to the level of effective application of knowledge, skills and judgment in clinical practice. Since then, nursing organizations in many countries have redefined their connotation according to their national conditions. The National League of Nursing, (NLN)\(^{[3]}\) believes that nursing clinical practice ability is the ability to correctly understand and effectively implement evidence-based nursing in the changing nursing environment to achieve the optimal results. At present, there are several situations in the study of MNS clinical practice ability. First, it is necessary to build MNS core ability system and take clinical practice ability as an important indicator of core ability. The second is to carry out a special research on the clinical practice ability index system, and the third is to build a research on the MNS clinical practice ability index system in different specialty directions. The domestic nursing community defines it as the physiological and psychological characteristics that nursing staff need to transform their knowledge and skills to find and solve practical clinical problems. In 2014, the Nursing Sub-committee of the National Medical Professional Degree Graduate Education Steering Committee proposed that the clinical practice abilities that nursing master degree graduate students should have include health assessment and clinical decision-making ability, undergraduate nursing skills, and nursing ability of acute and critical patients, etc. We used the keywords "Master of Nursing degree" and "Clinical practice ability" to search from the CNKI, screened the obtained literature, and got 17 documents of studied the index system of clinical practice ability, and calculated index weight, including 9 works and 7 master's papers. See the ranking of nursing clinical practice ability in Table 1. Clinical practice ability have the highest weight in the ability index system in 9 literature. The seven abilities with the highest frequency were clinical practice ability, clinical scientific research ability, clinical management ability, clinical education ability, theoretical knowledge level, clinical analysis and thinking ability, and professional development ability (See Figure 1). The least frequently occurring abilities were self-management, social reflection, humanities, nursing ethics, and foreign language skills.

**Table 1. MNS Graduate Student Clinical Practice Ability Index and Weight Ranking**

<table>
<thead>
<tr>
<th>Author</th>
<th>time</th>
<th>Types of papers</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tan Jing(^{[5]})</td>
<td>2011</td>
<td>master's thesis</td>
<td>Clinical practice competence</td>
<td>Judging the thinking ability</td>
<td>Professional development competence</td>
<td>Clinical scientific research capability</td>
<td>Educational ability</td>
<td>Nursing management ability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Year</td>
<td>Type</td>
<td>Clinical analysis and thinking skills</td>
<td>Basic theory and systematic expertise</td>
<td>Political thought and professional ethics</td>
<td>Teaching ability</td>
<td>Ability to research</td>
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</tr>
<tr>
<td>Bian Jiang</td>
<td>2012</td>
<td>Master's thesis</td>
<td>Clinical practice ability</td>
<td>Theoretical knowledge level</td>
<td>Ideological and moral quality</td>
<td>Clinical research ability</td>
<td>Clinical teaching ability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chen Yuan</td>
<td>2012</td>
<td>Master's thesis</td>
<td>Clinical practice ability</td>
<td>Professioinal ethics</td>
<td>Clinical research ability</td>
<td>Clinical teaching ability</td>
<td>Organizational management ability</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mu Ju</td>
<td>2013</td>
<td>Master's thesis</td>
<td>Clinical nursing practice ability</td>
<td>Clinical research ability</td>
<td>Clinical teaching ability</td>
<td>Clinical teaching ability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tang xianping</td>
<td>2013</td>
<td>Treatise</td>
<td>Clinical practice ability</td>
<td>Professional basic knowledge</td>
<td>Clinical research ability</td>
<td>Clinical teaching ability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zhang Haili</td>
<td>2013</td>
<td>Treatise</td>
<td>Clinical practice ability</td>
<td>Educational ability</td>
<td>Research ability</td>
<td>Clinical and professional leadership skills</td>
<td>Self-management ability</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Li Mu</td>
<td>2013</td>
<td>Master's thesis</td>
<td>Theoretical knowledge and specialized nursing skills and ability</td>
<td>Judging the thinking ability</td>
<td>Educational ability</td>
<td>Interpersonal and communication skills</td>
<td>Nursing ethics competence</td>
<td>English proficiency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JuLiNa</td>
<td>2014</td>
<td>Treatise</td>
<td>Clinical practice ability</td>
<td>Professional quality</td>
<td>Communication and coordination skills</td>
<td>Clinical research capability</td>
<td>Clinical research ability</td>
<td>Clinical management ability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sun Ning et al</td>
<td>2014</td>
<td>Treatise</td>
<td>Clinical practice competence</td>
<td>Judging the thinking ability</td>
<td>Professional development competence</td>
<td>Clinical scientific research capability</td>
<td>Educational ability</td>
<td>Nursing management ability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Li Shengli</td>
<td>2014</td>
<td>Treatise</td>
<td>Nursing practice ability</td>
<td>Nursing scientific research ability</td>
<td>Nursing education ability</td>
<td>Nursing management ability</td>
<td></td>
<td>Interpersonal competence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zhou Biyun</td>
<td>2016</td>
<td>Master's thesis</td>
<td>Clinical nursing practice ability</td>
<td>Ideological and political</td>
<td>Ability to research</td>
<td>Speculative knowledge</td>
<td>Nursing educational quality</td>
<td>Nursing management</td>
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</table>
4. Cultivation and Assessment of MNS Clinical Practice Ability

4.1 Time of Clinical Practice
American senior practice nurses in practice arrangement, nurses can choose internship time according to their own learning situation, in the learning process of not less than 500h of clinical practice, in some specialized subject training direction, discretionary extend the practice time, about 22% ~ 60% of the whole learning time, during the students should also to participate in experience sharing seminars and workshops, each time not less than 3h. The School of Clinical Nursing of La Trobe
University in Australia proposes that students can freely choose to complete the 450h practice task in one or two semesters according to their own conditions. In China, a unified MNS research practice time standard has not been established, the nursing college clinical practice is generally arranged in the second semester, 3-year MNS graduate clinical practice training time is 18 to 24 months, and some institutions are 18 to 30 months; 2-year graduate clinical practice training time is not less than 12 months, and the practice time in relevant departments of the specialty is not less than 6 months. MNS clinical rotation departments in most colleges and universities are mainly arranged according to the research direction of tutors, but lack of unified regulations. Chongqing Medical University adopts the dual-track and dual-control and phased training mode for MNS, with 6 months of clinical practice in the research direction, 18 months of clinical practice in the basic stage, and 6 months of specialized orientation training.

4.2 Clinical Practice Content

Foreign countries require nursing graduate students to master the training specialized practice content while improving their direct clinical nursing ability. For example, students in emergency and critical care need to master the use of ventilator, cardiopulmonary resuscitation technology, treatment of acute attack of myocardial infarction, transplantation care; pediatric emergency students should learn pediatric emergency and chronic disease care, pediatric tumor care, and pediatric first aid; students in neonatal care are required to solve neonatal respiratory distress and metabolic disorder in emergency. Some specific medical events, such as large-scale casualties, are mainly trained through simulation exercises. The American Association of Colleges of Nursing requires nursing graduate students to independently complete the evaluation, diagnosis, implementation, evaluation of patients, and translate theoretical knowledge into practice.

In the practice stage of China, we focus on cultivating MNS professional practice ability and the ability to find, analyze and solve practical clinical problems. The clinical practice content is arranged according to the direction of students' training, and the focus of each specialty practice content is different. Generally, it is required for the management of 3~5 beds under the guidance of clinical teachers, and to meet the relevant ability requirements. In China, MNS culture is poorly targeted in clinical practice content design, which does not reflect the differences in clinical practice focus in different culture directions and the needs of personalized development of MNS. Based on cultivating MNS become the goal of high-level applied talents, MNS clinical practice in the basic operation skills, should highlight the subject practice ability, and according to the cultivation of students' direction, work experience, professional ability and future career planning hierarchical according to their aptitude, targeted to arrange clinical practice content, requires it to complete independent clinical operation, and effectively cope with emergencies.

4.3 Clinical Practice Teaching Methods

In MNS practice teaching, foreign teaching methods are flexible and diverse, aiming to mobilize students' subjective initiative and cultivate their clinical thinking and practical ability. The teaching methods adopted include heuristic teaching, problem debate, cooperative learning, interactive learning, reflective group supervision teaching method, learning methods centered on patient nursing problems, evidence-based practice teaching method, self-regulation learning strategies, simulation laboratory and standardized patients. Kelly [21] used the design-deduction-evaluation situation simulation method for MNS clinical practice teaching, allowing students to design simulation scenes for interpretation and evaluate each other. This practice-oriented teaching method emphasizes students' participation and has achieved good results. In more and more institutions, MNS can watch classroom presentations online, participate in discussions, submit clinical logs, and complete tests online for distance learning.
Most colleges and universities in China MNS clinical practice still through clinical teaching teacher demonstration demonstration, and under the supervision of the form of nursing operation, teaching more case teaching, nursing records discussion, nursing, traditional methods / medical rounds, workshops and seminars, and most are still teachers, lack of MNS independent discovery and the cultivation of the ability to solve clinical practical problems. Domestic scholars are gradually introducing more advanced teaching models into MNS clinical practice. At present, most colleges and universities still use the practical teaching methods for nursing undergraduates and science degree graduate students, which do not reflect the characteristics and advantages of MNS teaching, and cannot cultivate their clinical practice ability in a targeted and individualized way. Therefore, in the clinical practice of MNS, we should draw lessons from foreign educational experience, combine with the training direction, actively explore practical teaching methods, and pay attention to students' personal ideas. With students as the center, teachers only play the role of instructors, MNS can choose topics or discussions based on clinical problems, so as to improve their independent learning ability and promote teaching and learning. In the process of clinical practice, more open teaching methods such as heuristic teaching and PBL are adopted, and reflective groups can be set up for self-supervision in clinical practice, in order to self-promote.

4.4 Assessment Method
The MNS clinical practice assessment is evaluated based on their performance and clinical practice reports during clinical practice. In the UK, the master of nursing is often assessed through nursing keynote speeches, practice reports and small papers of prescribed content and length. In addition, the method of objective structure clinical examination (OSCE) is often used in the assessment of clinical practice ability.

In China, MNS clinical practice assessment is mainly conducted in the form of subject examination, mid-term assessment and graduation assessment. However, in terms of clinical practice evaluation content, colleges and universities have different settings according to their own conditions, and mostly conduct assessment from the aspects of theoretical knowledge, operation skills and nursing documents. The clinical practice ability assessment mainly evaluates whether MNS has the standard nursing operation ability and the ability to deal with the specialized nursing problems independently. According to the study of Liu Zhejun, the clinical ability of MNS graduate students can be evaluated in the form of nursing rounds and operational assessment. In the clinical ability assessment of graduate students with medical master's degree, sub-station assessment is adopted, in the form of usual clinical ability assessment, medical record assessment, surgery or auxiliary diagnosis and treatment technology operation. The evaluation of MNS clinical research ability can be assessed from the aspects of thesis proposal, topic research, thesis defense, research results exchange and so on. All these suggest that corresponding assessment methods should be formulated for specific MNS core capability indicators. The vast majority of experts believe that MNS graduate students should be evaluated in clinical rotation and clinical competence assessment, which indicates that the core competence of MNS graduate students should be evaluated in the form of both formative evaluation and summary evaluation. Yao Jinlan [22] believes that the assessment of MNS graduate students should be divided into multiple links, such as department rotation assessment, mid-term assessment and graduation assessment, etc. Each link has specific requirements, and students can enter the next training link after passing the assessment. This study shows that the assessment of clinical nursing ability, nursing management ability, ethical decision-making ability and education ability tend to be conducted by clinical teachers, supplemented by the form of expert group; students 'clinical practice and teaching ability; the expert group mainly evaluates students' literature reading, participation in academic activities and
judging thinking ability. Therefore, for the assessment of MNS core competence, people who are relatively familiar with the field should be selected as the master according to the training objectives and content.

Compared with foreign countries, the evaluation method of MNS clinical practice ability in China is relatively single and has strong subjectivity. The assessment method of "subject examination, mid-term assessment and graduation assessment" cannot evaluate dynamically and timely the clinical practice ability of MNS. Therefore, in the process of clinical practice, the evaluation method of combining formative evaluation and summary evaluation should be adopted to replace the traditional theory and operation examination. For example, the mini clinical exercise evaluation method and objective structure clinical examination are combined to conduct dynamic evaluation and assessment of MNS practice ability, and pay attention to the training direction. Professional knowledge and professional skills, timely feedback of clinical practice results. In addition, the clinical practice standards and evaluation methods of each department should be refined to promote learning through evaluation, so as to improve the clinical practice ability of MNS.

Table 2. Assessment Methods of MNS Clinical Practice Ability in China

<table>
<thead>
<tr>
<th>Author</th>
<th>Time</th>
<th>Types of papers</th>
<th>Evaluation mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peking Union Graduate College of Medicine [23]</td>
<td>2013</td>
<td>Culture scheme Wheel assessment Stage assessment</td>
<td></td>
</tr>
<tr>
<td>Yao Jinlan [22]</td>
<td>2014</td>
<td>Treatise Department rotation assessment Mid-term assessment Graduation assessment</td>
<td></td>
</tr>
<tr>
<td>The Southern Medical University [25]</td>
<td>2017</td>
<td>Culture scheme Clinical case analysis Specialized nursing case management Discussion of difficult cases</td>
<td>Participate in nursing consultation</td>
</tr>
<tr>
<td>Li Zheng [18]</td>
<td>2018</td>
<td>Treatise Mini-clinical evaluation Objective and structured clinical examination Nursing ward round evaluation Medical record defense Reflect on diary evaluation</td>
<td></td>
</tr>
<tr>
<td>Sun Hujuan, [27]</td>
<td>2020</td>
<td>Master's thesis Nursing teaching ward rounds Nursing lecture Nursing case case report Quality of care improvement report Nursing literature seminar class Nursing medical record writing</td>
<td></td>
</tr>
</tbody>
</table>
5. Summary

To sum up, the training of clinical practice ability of MNS in China is still in a period of rapid development, so we should constantly summarize the advanced experience at home and abroad, actively explore the MNS training mode suitable for China's national conditions and reflecting the characteristics of nursing specialties, and realize the training goal of application-oriented senior nursing practice talents.

5.1 Optimize the Curriculum Setting and Strengthen the Connection between Theory and Practice

Establish a set of curriculum system with MNS characteristics distinguished between nursing science degree and clinical medicine degree graduate students, such as fine and deep nursing courses, covering clinical nursing management, scientific research, teaching, and students with different specialized nursing directions take different nursing courses. Through phased and progressive learning, theoretical knowledge can be integrated into clinical practice to avoid the disconnection between theory and practice.

5.2 Reform Teaching Methods to Stimulate Students' Interest in Clinical Practice

Before entering clinical practice, by design-deduction-evaluation situation simulation and standardized patients, the practice plan can form a concrete and feasible practice teaching module and system, so that MNS can have an overall understanding of the relevant knowledge and skills of clinical practice ability. Then, according to the professional direction of the tutor, the students will be trained on the basis of the rotation of each subject, focusing on cultivating the practical ability of a certain specialty. At the same time, MNS organizes reflection teams to implement self-supervision of clinical practice and assist in clinical nursing management.

5.3 Standardize the Evaluation and Assessment to Ensure the Training Quality

From the two aspects of "teaching" and "learning", on the basis of the investigation and analysis of students' clinical practice ability, the management, scientific research and teaching ability related to clinical work are evaluated. Establish the clinical practice teaching and guidance method of the clinical tutor group, adopt the formative evaluation, conduct the dynamic evaluation and assessment, and feedback the clinical practice effect at any time. It is suggested that clinical nursing ability and ethical decision-making ability should be assessed in the clinical ability assessment, clinical research ability and clinical education ability should be assessed after class, and nursing management ability should be assessed in the clinical rotation period. The assessment of clinical nursing ability, ethical decision-making ability and nursing management ability mainly relies on clinical teaching teachers, while the assessment of clinical research ability and clinical education ability mainly relies on the mentor group.

Acknowledgments

This paper is supported by Hunan Social Science Achievements Evaluation Committee (No. XSP19YBZ076)

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