Discussion on the Graduation Practical Ability Assessment Model for Master of Nursing Specialist Students

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Abstract

Objective: To explore graduation practical ability assessment mode of graduate students in nursing (Master of Nursing Specialist, MNS). **Methods:** All 28 MNS 2020th graduate students in a university were selected as subjects by convenient sampling method, using the improved 4-station objective structured examination (Objective Structured Clinical Examination, OSCE) model. The assessment content included nursing assessment, nursing diagnosis, basic nursing operation, specialist nursing operation, theoretical written test and oral test and overall evaluation. And self-made questionnaire was used to evaluate the effect of the assessment model and the improvement of clinical practice ability of graduate students. **Results:** The overall satisfaction rate of graduation assessment was 89.51%, the overall satisfaction rate of graduation assessment mode and practical ability improvement evaluation was 84.66%, the pass rate of assessment results was 100%, and the excellent rate was 71.42%. **Conclusion:** The MNS graduation practical ability assessment model has a high degree of satisfaction, objectively evaluates the knowledge, skills, attitudes and emotions of graduate students, promotes the comprehensive quality and ability of graduate students, which is worthy of promotion.

Keywords

Educational Assessment, Nursing, Graduate Students, Clinical Practice Ability

1. Introduction

Master of Nursing Specialist (MNS) graduate practical ability is its primary and foremost core ability [1], is the basis and premise of the transformation into a

clinical nursing expert, and it is an important content in the training process [2] [3]. Graduation assessment is an important link in the teaching of practical ability. It is not only a review of the overall learning situation of graduate students, but also an effective means to test the teaching effect, evaluate the teaching quality and improve the teaching work. Due to the late development of MNS education in China, there is still a lack of a unified graduation practical ability assessment model, objective structured exam (Objective Structured Clinical Examination, OSCE) is a simulated clinical scenario, assessment model using standardized patients for a range of clinical tasks, comprehensive clinical ability can be evaluated comprehensively and objectively, but currently it is mainly used for the assessment of medical students and nursing undergraduates. Therefore, our school adopted the improved OSCE in the practical ability assessment of nursing master degree graduate students, to explore the feasibility of its application and to clarify the problems existing in the assessment process, as reported below.

2. Methods

2.1. Participants

28 graduate students in nursing 2020 of our hospital were selected as the research objects, including 6 male and 22 female, aged 24 - 34.

2.2. Graduation Assessment Design Based on Post Competency (See Figure 1)

2.2.1. Cases Compilation Assessment

Design cases according to the research direction of graduate students. Full-time and part-time teachers of internal, external, gynecological and pediatric nursing courses in schools and practice hospitals will jointly compile real cases from clinical sources and design the evolution process of the disease. Each department will compile 5 cases, the contents of which are as follows: 1 basic nursing operation, 1 specialist operation, 1 written test, 1 discharge guidance or health education, 1 observation of the condition or nursing evaluation, 2 oral content, a total of 100 points. Cases are divided into teacher version, student version and standardized others version.

2.2.2. Standard Patient (SP) Training

In order to provide close to real clinical scenes for graduate students graduation assessment and facilitate their situational perception, nursing undergraduates with clinical practice experience, good communication skills and love to perform are selected to play the role of "standard patient". According to the case content, they were trained in basic information, current history, past history, family history, living habits, symptom description, positive signs, psychosocial status and questioning skills to ensure that the graduation assessment can truly and comprehensively reflect the patient's situation, and the operation that cannot use real people is all carried out on the model.
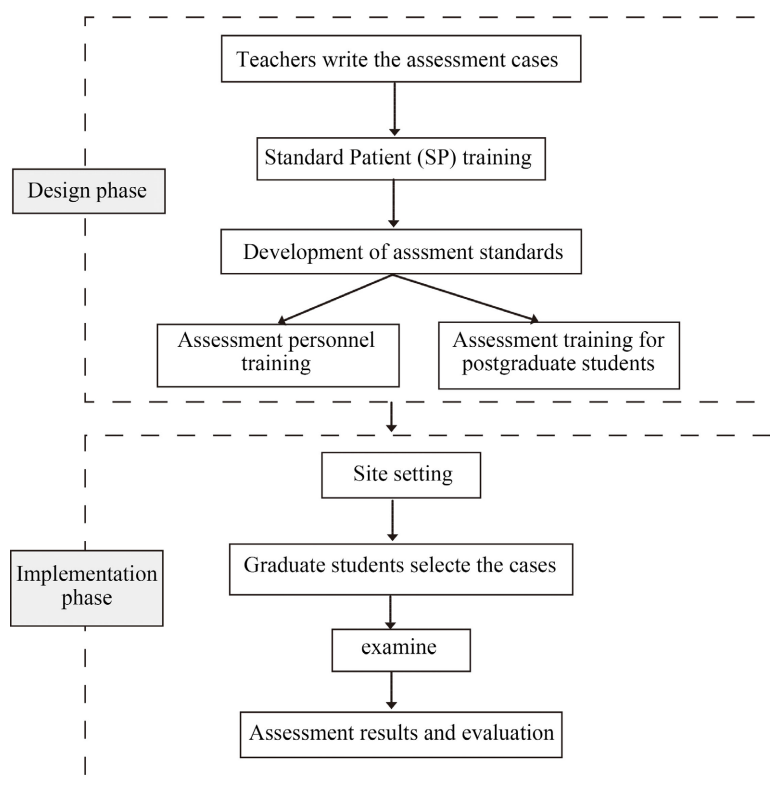
Figure 1. Flow chart of assessment design and implementation.

2.2.3. Development of Assessment Standards

Teachers in schools and teaching hospitals shall combine the actual situation of cases and assessment content, focus on discussion, formulate the scoring standards for basic nursing operation, specialized nursing operation, consultation and health education at each assessment site, as well as the reference answer standards, theoretical questions and the overall evaluation standards. The overall evaluation criteria include clinical thinking, communication skills, work attitude, emergency response ability, humanistic care and other aspects.

2.2.4. Assessment Personnel Training

Assessment personnel shall be composed of the school and the teaching hospital. One week before the examination, the assessment personnel shall be organized to conduct training, introduce the principles, procedures and requirements of the examination, and send the examination process, the name of the assessment items and the evaluation criteria to the assessment experts, so as to achieve the normalization, standardization and unification of the assessment, to ensure the homogeneity of the assessment.

2.2.5. Assessment Training for Postgraduate Students

The week before the assessment, the assessment principles, procedures, content, assessment proportion, method and evaluation method are preached, let the graduate students have a preliminary understanding of the assessment and make good ideological and psychological preparation.

2.3. Implementation of Graduation Assessment (See Figure 1)

2.3.1. Site Setting

Each case is designed to have 4 stations, namely pre-hospital rescue test station, emergency center test station, specialist ward test station and discharge test station. The time for case analysis and preparation of articles is 15 min, each test station is 8 - 10 min. The entrance and exit of the test station are separated when setting up the test station, one volunteer is responsible for coordinating the arrangement at each station to ensure the smooth progress of the test.

2.3.2. Examination Content

15 minutes before the assessment, graduate students will select the corresponding assessment cases of medical nursing, surgical nursing, obstetrics and gynecology nursing and pediatric nursing according to the research direction, enter the preparation room to prepare assessment items according to the extracted case data, and then enter the four stations successively for assessment, as shown in Table 1. There were SP patients at each station.

2.3.3. Content and Proportion of Assessment Score

Each station is scored by 2 teachers who have been assessed and trained according to the scoring standard, the average value was taken as the final score. The specific content and proportion of the assessment and scoring are shown in Table 2.

Table 1. Content of graduation practical ability assessment.

Projects	Assessment content
Item preparation room	Item preparation
Station 1 - Prehospital rescue test station	Nursing assessment, nursing diagnosis
Station 2 - Emergency Center test station	First aid related theoretical knowledge, basic nursing operation
Station 3 - Specialist ward test station	Specialist related theoretical knowledge, specialist nursing operation
Station 4 - Discharge test station	Health education, related theoretical knowledge

Table 2. Content and proportion of graduation practical ability assessment.

Projects	Points Value
Nursing assessment, nursing diagnosis	10 points
Basic nursing operation	20 points
Specialty Nursing Operations	20 points
Theoretical written and oral tests	30 points
Health Education	10 points
Overall rating	10 points
Total points	100 points

2.3.4. Effect Evaluation of Graduation Practical Ability Assessment

With reference to relevant literature [4], the questionnaire was designed and the validity was evaluated by 4 university and clinical experts, and the validity of the questionnaire was 0.89. After the graduation assessment, the evaluation of the rationality of the assessment mode and the improvement of their practical ability was investigated. The rationality evaluation of the assessment mode is investigated from six aspects: site setting, difficulty, content and time; the improvement of practical ability was evaluated from seven aspects, such as clinical thinking, operational ability, psychological quality and communication ability, and there was an open question. Graduate students were invited to write constructive comments on the graduation assessment.

2.3.5. Evaluation of Graduation Practical Ability Assessment Results

Grade evaluation is divided into A (90 - 100 points, excellent), B (80 - 89 points, good), C (70 - 79 points, commonly), D (60 - 69 points, passing) and E (below 60 points, failing).

3. Results

3.1. Rationality Evaluation of Graduation Practical Ability Assessment Mode

After the assessment, a total of 28 questionnaires were issued, and 27 were recovered, with a recovery rate of 96%. Graduate students satisfaction with the evaluation of graduation assessment mode was 89.51%, as shown in Table 3.

3.2. Evaluation of Graduate Students Practical Ability Improvement by Graduation Assessment Model

After the assessment, a total of 28 questionnaires were issued, and 27 questionnaires were recovered, with a recovery rate of 96%, the overall satisfaction of graduate students on graduation assessment mode and practical ability improvement evaluation is 84.66%, as shown in Table 4.

3.3. Evaluation of Graduation Practical Ability Assessment Results

Two teachers gave scores according to the scoring criteria, and the average value was taken as the final score of the graduate students. The pass rate of graduate practice assessment is 100%, the excellent rate is 71.42%; the highest score was 96.40, the lowest score was 62.80 and the average score was 82.30, as shown in Table 5.

3.4. Suggestions on the Assessment of Graduate Students Practical Ability

In terms of the assessment content, 96.3% of postgraduates suggested adding the assessment of management ability, 92.59% suggested adding the assessment of scientific research ability; In terms of assessment, 96.3% suggested adding standardized patient evaluation to examine, and 74.07% suggested adding examinee mutual evaluation.

Table 3. Rationality evaluation of graduation practical ability assessment mode (n = 27).

Projects	Very satisfied	satisfied	Average	Unsatisfied	Very dissatisfied	Satisfaction rate (%)
Site setup	11	13	3	0	0	88.89
Test difficulty	10	15	2	0	0	92.59
Content of assessment	11	14	2	0	0	92.59
Assessment time	10	13	4	0	0	85.19
Assessment ratio	13	11	3	0	0	88.89
Evaluation Method	13	11	3	0	0	88.89
Overall satisfaction	68	77	17	0	0	89.51

Table 4. Evaluation of graduate students' practical ability improvement assessment model (n = 27).

Projects	Very satisfied	satisfied	Average	dissatisfy	Very dissatisfied	Satisfaction rate (%)
Clinical thinking	10	12	4	1	0	81.48
Ability to operate	11	13	2	1	0	88.89
Theoretical knowledge	10	14	2	1	0	88.89
Communication and coordination	11	12	3	1	0	85.19
Mental qualities	10	13	3	1	0	85.19
Humanistic concern	10	13	3	1	0	85.19
Emergency capacity	10	11	5	1	0	77.78
Overall satisfaction	72	88	22	7	0	84.66

Table 5. Evaluation of graduation examination scores (n = 28).

Grade evaluation	Number of people (n)	Percentage (%)
A	3	10.71
B	18	60.71
C	7	25.00
D	1	3.60
E	0	0.00

4. Discussion

The training of MNS graduate students is different from that of academic graduate students, focusing on the cultivation of clinical practice ability, in addition, the current graduation assessment of MNS graduate students training also focuses on the evaluation [5] of clinical practice ability. A scientific and feasible clinical practice assessment model is an important means [6] to guarantee the quality of MNS graduate training. Therefore, it is very important to explore the assessment mode of graduate practical ability of nursing master's professional

degree, which is conducive to promoting the quality of graduate training.

4.1. Advantages of Graduation Assessment Mode

4.1.1. The Assessment Mode Is Scientific and Reasonable, Which Promotes the Assessment Effect

Assessment mode is the baton of learning, how to assess will guide students how to learn, and assessment is an important link and means [7] [8] of acceptance in the education process. The research results show that the overall satisfaction graduate students with the assessment site, difficulty, content, duration and proportion settings and the rationality of the scoring method is 89.51%, the pass rate is 100%, and the excellent rate is 71.42%. It shows that the graduation assessment mode is scientific, reasonable, practical and feasible, which guarantees the smooth progress of graduation assessment and achieves the purpose of graduation assessment. Because the assessment mode adopted in this study has been reformed on the basis of the traditional OSCE assessment mode, reducing the number of sites, simplifying the assessment procedure, covering a wide range of assessment contents and projects, combining theory with practice, basic nursing operation with specialist nursing operation and site single evaluation with overall evaluation, and the assessment environment is close to clinical practice. Cases run through the whole process of assessment, and each site carries out individual assessment and overall assessment for graduate students, which is conducive to their self-assessment and improvement, achieving the purpose of assessment and promoting the assessment effect.

4.1.2. The Assessment Mode Improves the Knowledge, Skills, Attitude and Emotion of Graduate Students

Graduation assessment is a test of the application of theoretical knowledge, clinical skill operation, clinical thinking training and humanistic quality of graduate students after clinical practice. The results of the questionnaire survey show that the overall satisfaction of the graduation assessment mode on the improvement of graduate students clinical practice ability is 84.66%, indicating that the assessment mode adopted in this study has promoted the comprehensive quality and ability of graduate students. Because the conventional assessment mode in the past focused on the assessment of basic nursing operations and related specialized skills, ignoring the assessment of candidates comprehensive quality and ability [9], the assessment mode in this study was closely combined with clinical cases, adopted SP and multi-site design, so that the examination was closer to the clinical context. In addition to the assessment of theoretical knowledge, it also takes the candidates clinical thinking, operational ability, psychological quality and humanistic care as the assessment content, reflecting the level of clinical practice ability of graduate students and the shortcomings in the aspects of knowledge, skills, attitudes and emotions. This study is consistent with the results of Zhu *et al.* [10], indicating that the assessment model objectively and comprehensively evaluates the students' clinical practice ability. However, this study shows that the graduate students' satisfaction with the evaluation of clini-

cal thinking and emergency response ability improvement of the graduation assessment mode is 81.48% and 77.78%, both lower than 85%, suggesting that continuous improvement should be made in the future assessment.

4.2. Limitations and Prospects

The graduation examination of the professional degree of Master of Nursing in our school is in the exploratory stage, and there are still some shortcomings and problems in practice and application, which need to be further improved. 1) The assessment content needs to be continuously optimized. At present, there is no content related to scientific research ability and management ability, and the research without clinical work experience is the same as the assessment content of graduate students with work experience. The assessment content needs to be continuously enriched and improved in the future. 2) The lack of SP evaluation and examinee mutual evaluation in the assessment needs to be explored in the future. Because SP can give evaluation based on patients' personal feelings, so as to increase the objectivity of the evaluation, candidates' mutual evaluation can cultivate the critical thinking mode of graduate students, and help teachers to fully grasp the learning situation and adjust the teaching strategy [11]. However, the effectiveness and accuracy of their evaluation need to be tested. 3) The evaluation criteria still need to be refined. The items of the evaluation table used in the current evaluation are relatively coarse, the scoring points are not detailed enough, and there are some confusion in the teacher's evaluation. The scoring criteria need to be further optimized, and the influence of subjective factors on the evaluation score should be excluded as far as possible, so as to make the evaluation criteria more scientific, standardized and objective.

5. Summary

The level of clinical practice ability is the key index to reflect the training quality of MNS graduate students, and the application of assessment model is very important in teaching process. The assessment model adopted in this study meets the needs of the development of MNS graduate education which emphasis on the cultivation of graduate knowledge, skills, attitudes and emotions, has achieved good assessment results. However, it is still necessary to further build a more scientific, just, objective and operable model.

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Author Contributions

HZ and APG designed and supervised the study. FP reviewed the references. JZ and FP wrote the manuscript. JZ and MTH contributed to tables and figure, HZ and APG revised the manuscript, HZ and APG acquired funding. All authors read and approved the final manuscript.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

[1] Liu, P., You, O., Liu, S., Li, Y.A. and Luan, X.R. (2021) Meta Integration of Training Experience Quality Research during the Study of Master of Nursing in China. *Journal of Nursing*, **7**, 35-42. (In Chinese)

[2] Li, Z., Wang, J., Li, Y.G., Li, S.Y., Zhou, X.N., Zhou, C.X. and Li, X.X. (2018) Research on the Evaluation Index and Assessment Method of Master of Nursing Degree. *Chinese Journal of Nursing*, **1**, 12-16. (In Chinese)

[3] Garside, J.R. and Nhemachena, J.Z. (2013) A Concept Analysis of Competence and Its Transition in Nursing. *Nurse Education Today*, **5**, 541-545.
https://doi.org/10.1016/j.nedt.2011.12.007

[4] Han, W., Li, Y.X., Li, H.M. and Zheng, J. (2019) Application of Objective Structure Clinical Examination Model in Assessment of Clinical Ability. *Guangxi Medicine*, **20**, 2676-2678. (In Chinese)

[5] Ge, S.N., Zhao, Y., Wen, D. and Zhang, Q. (2018) The Influence and Role of Scientific Research Training on Clinical Practice Ability Training: Explore the Training Mode of Clinical Medicine Professional Postgraduates. *Research and Practice of Medical Education*, **6**, 953-956. (In Chinese)

[6] Li, H.T., Wu, J., Ni, Q.Q. and He, G.J. (2021) The Practice Exploration of Three-Stage Clinical Multiple Assessment Mode for Master of Nursing. *Higher Medical Education in China*, **1**, 130-131. (In Chinese)

[7] Leng, J. and Zhang, H. (2016) Discussion on the Application of OSCE Model and Traditional Assessment Model in Clinical Medicine Teaching. *Chinese Continuing Medical Education*, **33**, 17-19. (In Chinese)

[8] Jiang, D., Ren, L.X., Wang, S., Lu, F.X., Shao, M.F., Tong, S.A. and Zhang, Z.W. (2022) Reflect on the Reform of Clinical Medical Practice Teaching from the Professional Theory Examination of Undergraduate Examination. *The Continuing Medical Education in China*, **7**, 8-12. (In Chinese)

[9] Wu, J., Yang, Y., Jia, X.Y., Zhou, Y., Yan, X. and Wang, H.Y. (2018) The Influence of OSCE Assessment Mode on the Core Competency of Nursing Students. *Journal of Guizhou Medical University*, **6**, 742-744. (In Chinese)

[10] Zhu, X.M., Yang, S.F., Sui, S.J., Yang, L., Xiao, N.N. and Cui, Y. (2015) Establishment and Application of the OSCE Model in Nursing Specialty. *Chinese Higher Medical Education*, **8**, 92-93. (In Chinese)

[11] Zhu, J.J., Ding, W.H., Li, W., Fu, Z., Si, L.J. and Shi, J.J. (2022) Influence of Students Psychosocial Characteristics on Students' Mutual Evaluation in Undergraduate PBL Teaching of Oral Medicine. *Chinese Higher Medical Education*, **6**, 40-41. (In Chinese)