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Exploration and Application of the Five-Station OSCE Assessment Model in Higher Vocational Traditional Chinese Medicine Major

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Abstract: *Objective:* Aiming at the problem that traditional assessment methods for higher vocational Traditional Chinese Medicine (TCM) majors are difficult to comprehensively evaluate students' clinical comprehensive abilities, a five-station Objective Structured Clinical Examination (OSCE) model was constructed to align with qualification examinations and grassroots job requirements. *Methods:* Based on competency-based theory, the Delphi method was adopted to establish an evaluation system, and an OSCE model covering 5 stations (medical history collection and case analysis, TCM diagnosis and communication, acupuncture and tuina, physical examination, Western medicine skills and communication) was designed. A total of 63 students from Grade 2019 and 82 students from Grade 2020 majoring in TCM were selected as research objects. The model was implemented in the graduation assessment, and reliability, validity, and discrimination analysis of the assessment results were conducted. *Results:* The overall Cronbach's α coefficient of the assessment was 0.812, indicating good construct validity; the difficulty coefficient of each station ranged from 0.62 to 0.78, and the discrimination index was all > 0.25. The average score of students was 82.4 points with a pass rate of 100%. The assessment revealed teaching shortcomings such as syndrome differentiation and treatment thinking, humanistic communication, and Western medicine skill operation. 92% of students recognized that OSCE could truly reflect their clinical level. The passing rate of practical skills in the TCM Practicing Assistant Physician Examination for the two cohorts of students was approximately 80%. *Conclusion:* The five-station OSCE model is scientific, standardized, and highly operable. It can objectively evaluate students' clinical comprehensive abilities, guide teaching reform, and provide a promotable scheme for the evaluation of clinical skills in higher vocational TCM.

Keywords: Higher vocational Traditional Chinese Medicine; Five-station OSCE; Clinical competence assessment; Competency-based; Standardized patient

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1. Introduction

The State Council's Strategic Plan for the Development of Traditional Chinese Medicine (2016–2030) proposes the goal of achieving full coverage of TCM service areas and significantly enhancing service capabilities by 2030 [1]. As the core position for cultivating grassroots application-oriented talents, the educational quality of higher vocational TCM majors is crucial. However, the current evaluation of clinical competence in higher vocational TCM has long been inclined to "emphasize theory over thinking, single skills over comprehensiveness, and scores over feedback". Traditional assessment methods are difficult to fully reflect students' real diagnostic and therapeutic abilities, and there is a certain gap with the requirements of the national TCM Practicing Assistant Physician Qualification Examination. The Objective Structured Clinical Examination (OSCE), through a multi-station design, can construct clinical-like assessment scenarios to systematically evaluate knowledge application, operational skills, and clinical thinking, with the advantages of objectivity and standardization [2]. The application of Standardized Patients (SP) provides real, interactive objects and humanistic feedback for the assessment [3]. Studies have shown that the OSCE model integrating SP can effectively improve students' ability to combine theory with practice [4–6]. Based on this, since 2021, the teaching team of the TCM major in our college has explored the five-station OSCE assessment model based on competency-based theory and oriented to align with qualification examinations and grassroots job requirements, aiming to promote teaching reform and improve talent training quality through the innovation of the evaluation system.

2. Theoretical basis and design construction of the five-station OSCE assessment model

2.1. Construction basis: Taking competency-based as the core and "Two Alignments" as the orientation

Taking competency-based learning as the core and aligning with qualification examinations and grassroots job requirements, it is clarified that the clinical competence of higher vocational TCM students includes core technologies such as TCM four diagnostic methods, syndrome differentiation and treatment, and acupuncture and *tuina*, as well as non-technical competencies such as doctor-patient communication and humanistic care. This is highly consistent with the modules such as "professional quality", "medical history collection", and "syndrome differentiation and treatment" emphasized in the Practicing Assistant Physician Examination syllabus [7]. By deconstructing the requirements of the TCM Practicing Assistant Physician Examination and analyzing the correct answer rate, standardized stations are constructed around the core links of clinical diagnosis and treatment.

2.2. Index system: Scientific construction based on the Delphi method

To ensure the scientificity and authority of the assessment, the research team used the Delphi method to invite 14 experts from clinical, educational, and health management fields to conduct anonymous correspondence consultation. The results showed that the expert positive coefficient was 100%, the authority coefficient was 0.85, and the coordination coefficient was statistically significant ($P < 0.05$). Finally, an evaluation system including 5 first-level indicators (TCM and Western medicine diagnostic ability, TCM and Western medicine treatment ability, clinical communication ability, public medical care ability, professional attitude and literacy) and 18 second-level indicators was established, providing a direct basis for the precise design of subsequent stations.

2.3. Station design: Simulating the whole process of grassroots diagnosis and treatment

Based on the above index system and repeatedly aligning with the "three-station" model of the practical skills assessment of the Practicing Assistant Physician Examination, our college designed 5 logically progressive stations: Station 1 - Medical History Collection (SP) and Case Analysis; Station 2 - Four Diagnostic Skills and Doctor-Patient Communication; Station 3 - Appropriate Technologies such as Acupuncture and Tuina; Station 4 - Western Medicine Physical Examination; Station 5 - First-Aid Skills and High-Risk Situation Communication. Through the application of SP and scenario setting, the assessment of weak links, such as syndrome differentiation and treatment and humanistic care is strengthened (**Table 1**).

Table 1. "Five-Station" model of the OSCE assessment for TCM clinical skills

Station Name	Assessment Orientation	Core Assessment Content & Format	Integrated Competency Indicators
Station 1: Medical History Collection & Case Analysis	Ability to obtain clinical information and conduct syndrome differentiation in Chinese medicine	Conduct an 8-minute medical history collection (Ten Inquiries in Chinese medicine) with standardized patients (SPs), and complete case analyses of 2 common grassroots diseases (internal medicine, surgery, gynecology, pediatrics), including summarization of four examinations, etiology and pathogenesis, syndrome differentiation, treatment principles and methods, prescription and nursing	Information acquisition ability, syndrome differentiation analysis ability, and clinical thinking of Chinese medicine
Station 2: Chinese Medicine Diagnosis & Communication	Comprehensive application of four examinations and doctor-patient communication	Perform inspection, listening/smelling, inquiry and pulse-taking on SPs, interpret four-examination information and conduct syndrome differentiation, inform patients of their conditions, and show empathy	Four examination skills, information interpretation ability, doctor-patient communication skills and professional ethics
Station 3: Acupuncture & Tuina Skills	Standardized operation of characteristic Chinese medicine therapies and patient care awareness	Complete acupoint location, acupuncture manipulation, *tuina* techniques, cupping, moxibustion and other appropriate techniques on simulators/SPs	Operational standardization, manipulation accuracy, safety awareness, patient care awareness and communication during operation
Station 4: Physical Examination	Standardized operation of the Western medicine physical examination	Measure vital signs and perform physical examinations of various systems on SPs	Operational standardization, systematic examination, privacy protection and humanistic care
Station 5: Western Medicine Skills & Communication	Basic western medicine operation skills and complex situational communication	Perform western medicine operations such as cardiopulmonary resuscitation (CPR) and aseptic technique, and cope with high-risk communication scenarios (condition notification, informed consent, etc.)	First-aid skills, aseptic standards, emergency response ability, high-risk communication skills and professional values

3. Implementation path of the five-station OSCE assessment model in higher vocational TCM major

3.1. Implementation objects and stages: Dual application scenario design for graduation assessment and mid-internship inspection

The constructed five-station OSCE assessment model was specifically applied to two key nodes in the talent training process of higher vocational TCM majors: comprehensive graduation assessment and mid-internship inspection. The design of this dual application scenario aims to cover different stages of students' clinical competence training, realize the process-oriented and summative comprehensive evaluation of learning

outcomes, and form a closed-loop management of "mid-term diagnosis - feedback improvement - graduation compliance". A total of 63 students from Grade 2019 and 82 students from Grade 2020 majoring in TCM in our college were selected as research objects. 8 standardized patients were trained and 12 examiners were involved to ensure the smooth development of the assessment.

3.2. Whole-process quality control

(1) Standardized training of SP: Strict "scripted" training was conducted for recruited SP to enable them to accurately and stably simulate symptoms, emotions, and reactions in cases, ensuring that all candidates receive basically consistent information stimulation during interaction.

(2) Homogenization training of examiners: Before the assessment, all examiners received unified training to deeply interpret the structured checklist and global rating scale standards of each station. Through trial scoring and discussion, subjective scoring differences were minimized to ensure the objectivity and fairness of the evaluation.

(3) Refined process design: A one-way cycle and time-limited assessment method was adopted, with a reasonable transfer time set to simulate the rhythm of real outpatient work. Each station was independent to avoid mutual interference.

4. Application effect analysis and evaluation

4.1. Assessment quality analysis: Reliability, validity, and discrimination

SPSS software analysis showed that the overall Cronbach's α coefficient of the five-station OSCE was 0.812, indicating good internal consistency among stations and reliable assessment results. The common factors extracted through factor analysis were basically consistent with the preset five station dimensions, with a cumulative variance contribution rate of 68.5%, showing good construct validity. The difficulty coefficient of each station ranged from 0.62 to 0.78, and the discrimination index was all higher than 0.25. The discrimination of Station 1 and Station 2 exceeded 0.35, indicating that the assessment can not only test whether students meet the standards but also effectively identify students of different ability levels, with excellent diagnostic functions.

4.2. Student performance analysis and ability diagnosis

The average total score of 145 students was 82.4 points, with a pass rate of 100% and an excellent rate of 15.4%, achieving the training goals. However, in-depth excavation of the scores of each station accurately revealed the "shortcomings" in teaching:

(1) Weak link in syndrome differentiation and treatment: Data from Station 1 and Station 2 showed that most students could collect basic information (85%), but lost more points in the accuracy of syndrome differentiation and making correct judgments based on comprehensive information, indicating that the thinking transformation from "information collection" to "comprehensive analysis" is a teaching difficulty.

(2) Formalistic humanistic communication: In Station 4 and Station 5, many students showed tension and confusion when facing emotional SP or complex communication scenarios, with rigid communication language and a lack of real empathy and flexibility in response. The average score of this module was the lowest among the five stations.

(3) Urgent need to strengthen Western medicine skills: In the cardiopulmonary resuscitation operation in Station 5, nearly 35% of students had standardization problems, such as substandard compression depth and frequency, exposing the weakness of students' Western medicine first-aid skills. Nearly 28% of students had problems with the standardization of sterile operation, indicating a lack of sterile awareness. In the physical examination in Station 4, nearly 22% of students had problems such as non-standard operation and insufficient humanistic care.

4.3. Multi-party feedback and teaching feedback

Analysis of 143 valid student questionnaires showed that 92% of students believed that OSCE could better reflect their real clinical level than traditional skill examinations, and 86% of students believed that the questions were close to grassroots reality. Students generally reflected that the interaction with SP was "very real and stressful", which could make them find the problem of "being unable to apply book knowledge". In interviews with examiners, they all agreed that the OSCE scoring standards were detailed, reducing impression scores, and could more objectively evaluate students' adaptability and professional attitude. This feedback directly promoted teaching reform: for example, increasing the proportion of Case-Based Learning (CBL) in clinical courses such as TCM Internal Medicine to strengthen thinking training; adding tasks such as script compilation in practical training courses to increase simulated doctor-patient communication scenarios; increasing the class hours of Western medicine skill training, truly realizing "promoting learning and teaching through assessment".

5. Innovation and value

The core innovation of this study is not simply transplanting the OSCE form, but designing the five-station OSCE based on the dual orientation of "aligning with the TCM Practicing Assistant Physician Examination and grassroots positions". It integrates the core examination points of the Practicing Assistant Physician Examination and the "soft skills" such as professional literacy and doctor-patient communication required by grassroots positions into the evaluation system, realizing the connection between talent training and industry needs. Focusing on the higher vocational level, this study constructs a "five-station" scheme highlighting skill standardization, proficiency in handling grassroots diseases, and communication practicality, filling the empirical gap in this field. Innovation of the evaluation system: constructing a closed loop of "evaluation - feedback - improvement", expanding OSCE from summative evaluation to a teaching diagnostic tool, and feeding back teaching reform through data mining, forming a virtuous closed loop that promotes the spiral improvement of teaching quality.

6. Conclusion and prospect

After the practical test of two cohorts of students, this study successfully constructed and verified a scientific, standardized, and operable "five-station" OSCE assessment model for higher vocational TCM majors. This model fully covers the core requirements of the Practicing Assistant Physician Examination, accurately aligns with the competency-based approach of grassroots TCM physicians, can objectively and truly evaluate students' clinical comprehensive abilities, and effectively guide teaching reform through data diagnosis, which is an effective path to improve the quality of higher vocational TCM talent training. The passing rate

of practical skills in the TCM Practicing Assistant Physician Examination for the two cohorts of students was approximately 80% [8].

In the future, we will deepen the research from the following aspects: first, build a dynamically updated OSCE question bank covering more common grassroots diseases, and introduce artificial intelligence to assist case development to improve assessment efficiency [9]; second, explore the construction of a closed-loop system of "assessment - feedback - learning", introduce video review feedback, and transform OSCE from a "judgment tool" to a more powerful "teaching tool" [10]; third, carry out multi-center and large-sample follow-up studies, correlate the OSCE assessment results with graduates' passing rate of the Practicing Physician Examination and satisfaction of grassroots employers, further verify its predictive validity, and contribute more to the training of grassroots TCM talents.

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Disclosure statement

The authors declare no conflict of interest.

References

[1] Bai G, Gao Y, Yang P, 2025, Exploration on the Talent Training Model of Higher Vocational TCM Majors Based on Competency-Based Assessment—Taking Gansu Health Vocational College as an Example. Modern Vocational Education, 14: 38–41.

[2] Gleeson F, 2026, The Objective Structured Clinical Examination (OSCE): The True Origins. Irish Journal of Medical Science, prepublish: 1–7.

[3] National Administration of Traditional Chinese Medicine Certification Center for Traditional Chinese Medicine Practitioners, 2025, Practical Skills Examination Outline for the Qualification Examination of Assistant Practitioners of Traditional Chinese Medicine. TCM Test, visited on December 30, 2025, https://www.tcmtest.org.cn/contents.jsp?contentId=25461448AC9718BF&channelId=11530F62C477172A&pid=0&cName=0.

[4] Zhao Y, An C, Zheng S, et al., 2024, Application and Effect Evaluation of SP Scenario Simulation Teaching in TCM Outpatient Reception Training. Continuing Medical Education, 38(8): 84–87.

[5] Xi J, 2025, Application and Analysis of OSCE Assessment with Diversified Teaching Modes in the Teaching of

Pharmaceutical Interns. China Health Industry, 16: 206–209.

[6] Lim JJ, 2025, Understanding Students' Self-Efficacy and Motivation in Sequential OSCE: A Qualitative Study. BMC Medical Education, 25(1): 1736–1736.

[7] Zhong Q, 2025, Application of OSCE Assessment Based on Diversified Teaching Modes in Pharmaceutical Teaching. China Continuing Medical Education, 1: 113–118.

[8] Zafar I, 2026, Ten Tips for Utilizing AI to Generate High Quality OSCE Stations in Medical Education. Frontiers in Medicine, 12: 1744657–1744657.

[9] Teng M, 2025, Application of PDCA Cycle Teaching Model Based on OSCE Assessment in Standardized Training of General Practitioners. Full-Text Database (Education Science), 11: 53–56.

[10] Zhang H, Li J, Zhong L, et al., 2025, Exploring the Localization Effects of Organ System-Based Curriculum: A Comparative Study of Different Teaching Programs in Medical Education. Frontiers in Education, 10: 1629192.