

Application of Teacher Standardized Patients in Obstetric Situational Simulation Teaching: A Multi-Modal Assessment Study

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Abstract

Objective: To assess how integrating teacher standardized patients (TSP) into obstetric situational simulation curricula impacts teaching effectiveness, and to validate the value of a multi-modal assessment system for this educational model. **Methods:** We conducted a historical controlled study of fifth-year clinical medicine undergraduates completing obstetric internships at our hospital from May 2023 to May 2025. We assigned 30 interns (May 2024–May 2025) to an observation group, who received TSP-integrated simulation teaching built on a three-tier hierarchical simulation framework. Another 30 interns (May 2023–May 2024) formed a control group and completed conventional obstetric internship training. We compared teaching outcomes across groups using a multi-modal assessment system: exit theoretical examination, Objective Structured Clinical Examination (OSCE), Mini-Clinical Evaluation Exercise (Mini-CEX), and Directly Observed Procedural Skills (DOPS). **Results:** The observation group scored significantly higher than the control group on the exit theoretical examination, all Mini-CEX domains, and all DOPS domains (all $P < 0.05$). No significant difference emerged in OSCE scores for obstetric procedural standardization between the two groups ($P = 0.081$). **Conclusion:** Integrating TSPs into obstetric situational simulation teaching effectively elevates internship quality and builds interns' comprehensive clinical competence. The multi-modal assessment system delivers scientific, quantitative evidence to optimize obstetric teaching practices and drive continuous educational improvement.

Keywords Teacher Standardized Patient; Obstetric education; Situational simulation; Multi-modal assessment; Clinical teaching effectiveness standardized construction; New Medical Science; medical education; quality assurance

1 Introduction

Obstetric education faces unique practical challenges, rooted in strict requirements for maternal and infant safety, medical ethical compliance, and emergency clinical management [1]. First, limited clinical teaching

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resources—worsened by a growing decline in obstetric delivery cases—severely restrict interns' hands-on training with typical clinical cases, especially rare, life-threatening emergencies like amniotic fluid embolism and umbilical cord prolapse. Second, most obstetric procedures involve patient privacy, placing tight ethical limits on real-clinical scenario training. This gap hinders the development of core intern competencies: doctor-patient communication, emergency decision-making, and humanistic care. Third, obstetric emergencies strike suddenly, involve complex pathophysiology, and progress rapidly. They demand advanced clinical reasoning, interprofessional teamwork, and proactive problem-solving—skills not fully cultivated by traditional didactic and bedside teaching. Standardized patients (SPs) have partially mitigated clinical teaching resource shortages, but traditional SPs lack the clinical expertise and targeted teaching guidance needed for obstetric education. Teacher standardized patients (TSPs)—clinicians with extensive practice experience and formal teaching skills—address this gap. TSPs accurately simulate the physiological and psychological presentations of complex obstetric cases and provide real-time, formative feedback to interns. This dual role creates a powerful new approach to overcoming longstanding barriers in traditional obstetric teaching [2]. Situational simulation teaching bridges theoretical medical knowledge and clinical practice by creating immersive, high-fidelity clinical scenarios. Combining TSPs with situational simulation has thus become a key strategy to innovate and refine obstetric clinical teaching models [3]. Meanwhile, modern medical education evaluation has shifted from single summative assessments to multi-dimensional, process-focused, comprehensive multi-modal systems. A rigorous multi-modal assessment system enables full coverage and quantitative analysis of teaching outcomes, laying a scientific foundation for optimizing and advancing clinical teaching models. Current research in China focuses on either TSPs or situational simulation in obstetric education, with little systematic exploration of their integrated use and long-term effectiveness. Additionally, most supporting assessment systems remain overly simplistic, failing to meet modern medical education's need for comprehensive clinical competency evaluation. To address this gap, we developed a TSP-integrated, three-tier hierarchical simulation framework for obstetrics and a complementary multi-modal assessment system. We tested this model via a historical controlled study to create a replicable blueprint for obstetric internship reform—and to offer a valuable reference for implementing modern medical education evaluation across clinical disciplines.

2 Materials and Methods

2.1 Study Participants

Thirty fifth-year clinical medicine undergraduates completed a 4-week obstetric internship at our hospital from May 2024 to May 2025 and were enrolled as the observation group ($n=30$). A control group ($n=30$) comprised another 30 fifth-year undergraduates who completed the same 4-week internship from May 2023 to May 2024. The Medical Ethics Committee of Affiliated Hospital of Shandong Second Medical University approved the study (no formal approval number required for educational research). All participants provided written informed consent before enrollment. Inclusion criteria: (1) Completion of all obstetrics and gynecology theoretical courses, with consistent pre-internship teaching and academic backgrounds across groups; (2) No significant difference in pre-internship obstetrics and gynecology final exam scores between groups ($P > 0.05$); (3) Aged 20–23 years, with a 1:1 gender ratio in each group; (4) No significant differences in cognitive function, literacy, or consciousness between groups, measured via the Mini-Mental State Examination (MMSE) ($P > 0.05$); (5) No prior participation in obstetric situational simulation or TSP-based training. Exclusion criteria: (1) Absence from internship for ≥ 1 consecutive week due to illness, personal matters, or other reasons, resulting in incomplete training or assessments; (2) Voluntary withdrawal from the internship, transfer to another clinical department, or failure to complete all scheduled assessments.

2.2 Teaching Interventions

2.2.1 Observation Group: TSP-Integrated Situational Simulation Teaching

(1) TSP selection and standardized training: We selected five obstetrics and gynecology attending physicians with ≥ 3 years of clinical experience and outstanding teaching performance as TSP candidates. All completed a rigorous 4-week standardized training program covering clinical symptom and psychological state simulation, formative feedback techniques, medical ethics, and standardized case interpretation. After training, a panel of three obstetric chief physicians administered a unified case simulation assessment. Inter-rater reliability was tested via Kappa coefficient ($\kappa = 0.82$, $P < 0.001$), confirming consistent TSP performance in case simulation, feedback, and teaching guidance. A standardized obstetric case bank—including 12 typical and rare cases—was developed to support all simulation sessions. (2) Three-tier hierarchical simulation framework: The framework was designed around competency-based medical education and progressive skill building. Interns completed 60-minute structured simulation sessions once weekly for 4 weeks, in groups of 3–4 to ensure ample hands-on practice and feedback. Tier 1 (Week 1) – Basic obstetric skill training: Interns received systematic training on fundamental procedures (four-step abdominal palpation, pelvic measurement, vaginal examination, and fetal heart rate monitoring/interpretation) using high-fidelity medical simulators. The focus was to build solid basic operational skills and standardize procedural performance. Tier 2 (Week 2) – Complex obstetric case simulation: TSPs simulated common complex cases (e.g., vaginal delivery assistance, postpartum hemorrhage) with dynamically adjusted disease progression and clinical signs. This tier built interns' clinical decision-making, procedural adaptability, and basic emergency response skills in simulated settings. Tier 3 (Week 3) – Interdisciplinary emergency drills: We integrated resources from obstetrics, pediatrics, and anesthesiology to simulate high-fidelity interdisciplinary collaboration scenarios (e.g., amniotic fluid embolism rescue, neonatal asphyxia resuscitation) aligned with standardized teaching scripts and clinical practice guidelines. The goal was to enhance interprofessional teamwork, emergency coordination, and comprehensive critical care skills for severe obstetric emergencies. (3) Standardized teaching delivery: Detailed case materials and pre-training learning objectives were distributed 24 hours before each session to guide pre-class preparation. All simulations followed a standardized four-stage model: medical history collection $\rightarrow$ physical examination $\rightarrow$ clinical decision-making $\rightarrow$ team cooperation. TSPs provided real-time, targeted formative feedback throughout each session—focusing on procedural standardization, doctor-patient communication, and clinical reasoning logic.

2.2.2 Control Group: Conventional Obstetric Internship Teaching

The control group completed our hospital's conventional obstetric internship program at the time: didactic lectures + bedside clinical teaching + limited simulator demonstrations. Bedside teaching included ward rounds with attending physicians, observation of real clinical procedures, and occasional passive hands-on practice under supervision. Each simulator demonstration was repeated no more than 3 times due to limited resources. Teaching was delivered over 4 weeks, with sessions scheduled randomly based on clinical case availability and workload. Interns focused on observation, medical record documentation, and passive practice, with few opportunities for independent clinical decision-making or hands-on operation. We originally planned to provide TSP-integrated simulation training to the control group post-study, but this was unfeasible due to their graduation and geographic dispersion. The conventional program used in this study was our hospital's standardized curriculum for clinical medicine majors, fully aligned with national obstetric internship education norms. The TSP-integrated simulation model is now part of our hospital's routine obstetric internship curriculum for all subsequent interns.

2.3 Multi-Modal Assessment System

We used a comprehensive multi-modal assessment system to objectively evaluate teaching outcomes across groups. All assessments were administered by senior obstetric clinicians with extensive clinical and teaching experience—blinded to intern group assignment to eliminate bias. Assessment tools and indicators were as follows: (1) Exit theoretical examination: A written assessment measuring interns' comprehension, retention, and clinical application of obstetric knowledge post-internship. All questions were selected from our university's standardized teaching question bank, with a Cronbach's α of 0.86 (strong internal consistency), a content validity index (CVI) of 0.91 (high content validity), and identical difficulty across groups to ensure fairness. (2) Objective Structured Clinical Examination (OSCE): A station-based assessment of obstetric procedural performance, measuring mastery of core steps, technical key points, and operational standardization for basic obstetric procedures [4]. (3) Mini-Clinical Evaluation Exercise (Mini-CEX): A validated formative tool evaluating 7 key domains of clinical competence and professional literacy: medical history taking, physical examination, humanistic care, clinical judgment, health education and patient consultation, organizational effectiveness, and overall clinical performance. Each domain was scored on a 9-point Likert scale (1=poor, 9=excellent) based on direct observation of clinical performance [5]. (4) Directly Observed Procedural Skills (DOPS): A structured assessment focusing on practical procedural ability and professional clinical norms, with 11 core domains: procedure-specific basic medical knowledge, informed consent communication, pre-operative preparation, pain relief and sedation management, practical operational skill, aseptic technique, seeking appropriate assistance, post-operative management and follow-up, doctor-patient communication, professional literacy, and overall procedural performance. Each domain was also scored on a 9-point Likert scale (1=poor, 9=excellent) [6]. Note: DOPS "basic medical knowledge" refers to mastery of a procedure's indications, contraindications, relevant anatomy, and step-by-step execution—distinct from the theoretical knowledge assessed in entrance and exit exams.

2.4 Statistical Analysis

All analyses were performed using IBM SPSS Statistics 26.0 (IBM Corp., Armonk, NY, USA). After testing for normality and homogeneity of variance, continuous data were reported as mean $\pm$ standard deviation ($\bar{x} \pm s$). Inter-group comparisons were conducted via independent samples t-test. A two-tailed P value < 0.05 was considered statistically significant for all analyses.

3 Results

3.1 Exit Theoretical Examination and OSCE Scores

The observation group achieved a significantly higher mean score on the exit theoretical examination than the control group ($P < 0.001$), demonstrating that TSP-integrated simulation teaching improved interns' mastery and clinical application of obstetric theoretical knowledge. No statistically significant difference was found in mean OSCE scores for obstetric procedural standardization between the two groups ($P = 0.081$). Detailed results are presented in Table 1.

3.2 Mini-CEX Scores Across All Domains

The observation group scored significantly higher than the control group on all 7 Mini-CEX domains (all $P < 0.05$), including medical history taking, physical examination, humanistic care, clinical judgment, health education and consultation, organizational effectiveness, and overall clinical performance. This result confirms that TSP-integrated simulation teaching enhanced interns' comprehensive clinical com-

Table 1: Comparison of exit theoretical examination and OSCE scores between groups ($\bar{x} \pm s$, points)

Group	<i>n</i>	Exit theoretical examination	OSCE obstetric procedural standardization
Observation group	30	92.53 $\pm$ 2.30	92.60 $\pm$ 4.91
Control group	30	85.17 $\pm$ 3.48	89.73 $\pm$ 7.34
<i>t</i> -value	—	9.663	1.777
<i>P</i> -value	—	< 0.001	0.081

OSCE = Objective Structured Clinical Examination

petence and professional literacy—including non-technical skills like humanistic care and doctor-patient communication. Detailed results are presented in Table 2.

Table 2: Comparison of Mini-CEX subscale scores between groups ($\bar{x} \pm s$, points)

Assessment main	do-	Observation group (<i>n</i> = 30)	Control group (<i>n</i> = 30)	<i>t</i> -value	<i>P</i> -value
Medical history taking		8.447 $\pm$ 0.368	7.683 $\pm$ 0.787	4.814	< 0.001
Physical examination		8.453 $\pm$ 0.405	7.753 $\pm$ 0.796	4.193	< 0.001
Humanistic care		8.473 $\pm$ 0.374	7.737 $\pm$ 0.872	4.251	< 0.001
Clinical judgment		8.497 $\pm$ 0.351	7.753 $\pm$ 0.796	4.680	< 0.001
Health education & consultation		8.377 $\pm$ 0.398	7.687 $\pm$ 0.789	4.277	0.002
Organizational effectiveness		8.403 $\pm$ 0.390	7.677 $\pm$ 0.832	4.333	< 0.001
Overall clinical performance		8.407 $\pm$ 0.389	7.613 $\pm$ 0.850	4.647	< 0.001

Mini-CEX = Mini-Clinical Evaluation Exercise

3.3 DOPS Scores Across All Domains

The observation group achieved significantly higher mean scores than the control group on all 11 DOPS domains (all $P < 0.05$). This finding verifies that TSP-integrated simulation teaching improved interns' practical obstetric procedural ability, adherence to professional clinical norms, and overall procedural execution quality. Detailed results are presented in Table 3.

4 Discussion

4.1 Core Value and Unique Advantages of TSPs in Obstetric Education

TSPs bring unique, irreplaceable value to obstetric education—distinguishing them from traditional SPs. As practicing obstetricians and gynecologists with deep clinical expertise, TSPs accurately and realistically simulate the complex pathophysiological changes, clinical symptoms, and psychological states of obstetric patients (e.g., vital sign fluctuations in severe postpartum hemorrhage, emotional and behavioral manifestations of delivery anxiety) [7]. Their nuanced simulation of symptoms, body language, and emotional responses boosts the authenticity and immersion of simulation teaching, creating a more realistic clinical learning environment for interns [8]. This dual role—clinical simulation + real-time formative teaching—

Table 3: Comparison of DOPS subscale scores between groups ($\bar{x} \pm s$, points)

Assessment main	do-	Observation group ($n = 30$)	Control group ($n = 30$)	t -value	P -value
Procedure-specific basic medical knowledge		8.323 ± 0.399	7.770 ± 0.762	3.523	0.001
Informed consent communication		8.310 ± 0.419	7.883 ± 0.725	2.790	0.008
Pre-operative prepa- ration		8.360 ± 0.407	7.863 ± 0.754	3.147	0.001
Pain relief & seda- tion management		8.503 ± 0.386	7.990 ± 0.755	3.319	0.001
Practical operational skill		8.257 ± 0.403	7.780 ± 0.731	3.128	0.002
Aseptic technique adherence		8.273 ± 0.419	7.707 ± 0.741	3.648	0.003
Seeking appropriate clinical assistance		8.360 ± 0.383	7.720 ± 0.718	4.308	0.003
Post-operative man- agement & follow- up		8.257 ± 0.393	7.770 ± 0.697	3.330	0.003
Doctor-patient communication skills		8.300 ± 0.384	7.597 ± 0.683	4.913	0.003
Professional clinical literacy		8.293 ± 0.414	7.890 ± 0.777	2.510	< 0.001
Overall procedural performance		8.473 ± 0.417	7.833 ± 0.773	3.993	0.004

DOPS = Directly Observed Procedural Skills

directly addresses longstanding challenges in traditional obstetric teaching: limited clinical resources, ethical barriers to real-scenario training, and a lack of targeted formative feedback. TSPs simulate privacy-sensitive procedures (e.g., vaginal examination, intrapartum assistance) in a standardized setting, eliminating ethical disputes and patient privacy risks associated with real-patient teaching. Our results show the observation group scored higher on procedural standardization and clinical norms—consistent with prior research [9]. For rare, critical cases (e.g., amniotic fluid embolism, eclampsia), TSPs use the standardized case bank to repeatedly simulate emergencies, letting interns build decision-making and emergency response skills in a safe, controlled environment. This explains the observation group's significantly higher scores in clinical judgment and emergency management [10]. TSPs also excel at adapting disease progression to intern performance and guiding targeted critical thinking training. For example, when simulating severe preeclampsia with sudden hypertension and convulsions, TSPs provide immediate feedback on interns' decision-making and interventions. This accelerates knowledge translation and skill acquisition far more effectively than the delayed post-procedure comments of conventional bedside teaching [11]. Prior studies confirm that TSPs combined with case-based learning (CBL) strengthen residents' communication and clinical reasoning skills; in obstetric gynecology training, TSPs improve scores in theoretical knowledge, case analysis, and doctor-patient communication [12].

4.2 Design and Effectiveness of the TSP-Integrated Simulation Framework

Our three-tier hierarchical simulation framework (basic skills → complex cases → interdisciplinary integration) aligns with competency-based medical education and the progressive skill-building principles of modern multidisciplinary simulation teaching. Tier 1 builds foundational obstetric skills (e.g., normal delivery, physical examination) using high-fidelity simulators—mirroring the virtual simulation approaches used in traditional Chinese medicine surgery training [13]. This lets interns repeat basic procedures in a standardized setting, building solid skills and standardized performance. Tier 2 introduces complex cases (e.g., postpartum hemorrhage, preterm birth) with scenarios designed to follow natural disease pathophysiology (prodromal symptoms, progression, complications). This strengthens interns' dynamic clinical judgment and emergency management abilities [14]. Tier 3 simulates interdisciplinary rescue scenarios (e.g., obstetric-pediatric collaboration for neonatal asphyxia)—aligning with real-world multidisciplinary rapid response teams for severe obstetric emergencies. Multi-role drills enhance interprofessional communication and teamwork efficiency [15]. Our results show the observation group improved significantly on both theoretical and procedural scores—proving TSP-integrated simulation teaching effectively bridges theoretical knowledge and clinical practice, and transforms knowledge into actionable clinical competence. This aligns with prior research: situational simulation combined with standardized patients boosts theoretical and clinical skill scores in traditional Chinese medicine surgery [13], and simulation teaching increases classroom engagement and knowledge application in medical microbiology [16]. Notably, no significant difference emerged in OSCE scores between groups ($P = 0.081$). This stems from the OSCE's focus on fixed procedural standardization. During our study, the obstetric OSCE only assessed four-step abdominal palpation—a highly standardized basic procedure that does not capture TSP-integrated teaching's strengths in dynamic clinical guidance, decision-making, and emergency response. TSP-integrated simulation prioritizes flexible clinical decision-making, adaptive procedural performance, and emergency skills in complex, dynamic settings [17]. This mirrors findings in anesthetic crisis management simulation, where traditional standardized skill assessments fail to measure interns' clinical reasoning and problem-solving in complex scenarios [18]. We recommend optimizing future OSCE design by adding dynamic, complex clinical variables (e.g., peripartum cardiac arrhythmia, postpartum hemorrhage with coagulopathy, intrapartum eclampsia). This will create a more clinically relevant assessment system that better reflects real-world obstetric practice.

4.3 Complementarity and Teaching Optimization of the Multi-Modal Assessment System

Our multi-modal assessment framework—theoretical examination + OSCE + Mini-CEX + DOPS—provides full, comprehensive coverage of interns' cognitive ability, practical procedural skills, clinical reasoning, and humanistic literacy. Its strong complementarity and value for teaching optimization are fully demonstrated in this study and other multidisciplinary medical education research. OSCE delivers standardized, objective measurement of procedural standardization via structured stations, making it ideal for evaluating basic obstetric skills (e.g., four-step palpation, pelvic measurement) [4]. However, its focus on fixed procedures limits its ability to assess complex decision-making, adaptive performance, and emergency skills (e.g., postpartum hemorrhage management) [19]. Mini-CEX addresses this gap by evaluating the entire clinical workflow—from patient intake to follow-up—across 7 domains including humanistic care and clinical judgment. It captures non-technical skills: empathy for anxious patients, logical delivery decision-making, and effective health education [20]. As direct observers in simulation sessions, TSPs record these detailed interactive behaviors in real time, boosting assessment targetability and objectivity. DOPS complements Mini-CEX's macro-level competence assessment with micro-level procedural performance evaluation. It uses 11 specific indicators to identify procedural gaps (e.g., aseptic technique errors, incorrect instrument use in episiotomy, misprioritized steps in hemorrhage resuscitation) [6]. Together,

these four tools create a three-dimensional assessment system for obstetric internships: cognitive ability → clinical skill → professional attitude. Beyond comprehensive coverage, the system drives teaching optimization via data linkage and gap analysis. If DOPS reveals poor aseptic technique adherence, targeted simulation training for contaminated scenarios can be added. If Mini-CEX shows low communication scores, TSP-integrated standardized patient interaction drills can be strengthened [21]. Numerous studies confirm that combining multi-modal assessment with situational simulation significantly improves medical students' comprehensive clinical competence—especially in communication, clinical reasoning, and emergency response [22–24]. This system thus provides rigorous scientific, quantitative evidence to drive continuous quality improvement in obstetric education.

4.4 Paradigm Shifts: TSP-Integrated vs. Conventional Obstetric Teaching

TSP-integrated situational simulation teaching redefines obstetric internship education across three core dimensions: scenario design, learning model, and feedback mechanism—marking a clear advance over conventional bedside teaching. Conventional teaching relies on real clinical cases, so interns' practice opportunities are random and limited by case volume, disease diversity, and patient cooperation. This makes systematic training for rare emergencies or standardized procedural repetition nearly impossible. TSP-integrated teaching solves this with standardized, high-fidelity scenarios and a comprehensive case bank, creating a stable, controllable practice platform. Interns gain targeted, repeated practice with typical and rare cases (e.g., postpartum hemorrhage, amniotic fluid embolism), ensuring all receive sufficient, standardized training. Conventional teaching is teacher-centered, with interns acting as passive observers: watching procedures, writing notes, and assisting with simple tasks. Few opportunities for independent decision-making or hands-on practice hinder the development of active clinical reasoning and problem-solving. TSP-integrated teaching is student-centered and immersive: interns actively apply theoretical knowledge to solve real-world problems in dynamic simulated scenarios—through patient intake, diagnosis, and interprofessional teamwork. This builds critical clinical reasoning, independent decision-making, and emergency response skills. Conventional teaching provides delayed, general feedback—typically post-procedure summaries or ward round comments. Feedback focuses on outcomes, not process, and lacks targeted guidance on communication, decision-making, or procedural refinement. TSP-integrated teaching uses real-time TSP observation and scientific multi-modal assessment to identify procedural errors, communication gaps, and reasoning flaws as they occur. Combined with quantitative scoring, this feedback delivers precise, actionable improvement suggestions—creating a closed-loop learning cycle: clinical practice → formative feedback → targeted correction → repeated improvement [25]. This cycle accelerates skill acquisition and competence development—the core advantage of TSP-integrated teaching over conventional methods.

4.5 Study Limitations and Key Implementation Considerations

This study has several limitations to acknowledge. First, high resource investment: TSP selection and training require 4 weeks of intensive professional development, and the standardized case bank demands ongoing time and resources for maintenance and updates. Second, strict facility requirements: the three-tier framework needs specialized resources—high-fidelity simulation wards, interdisciplinary drill spaces, and advanced medical simulators. These create a high implementation barrier for primary and secondary hospitals with limited resources. Third, imperfect assessment system: multi-modal assessment's implementation cost and scoring standardization need further optimization; current OSCE stations do not fully cover dynamic, complex scenarios, potentially understating TSP-integrated teaching's value for emergency training. Fourth, single-center, small sample size: the study was conducted at a single tertiary hospital with a small sample, which may limit the generalizability of our results. Despite these limitations, the

TSP-integrated simulation model offers clear long-term advantages: strong repeatability, stable teaching effectiveness, and significant improvements in interns' comprehensive clinical competence. It outperforms conventional teaching in both quality and outcomes [26]. For successful implementation and scaling, we emphasize three key considerations: Standardize TSP team management and training: Conduct regular cross-group case simulation calibration and feedback training to ensure consistent TSP performance in case simulation and formative feedback. Deliver dynamic, targeted teaching: Use Mini-CEX and DOPS results to identify intern skill gaps, then flexibly add or remove simulation scenarios and training modules to deliver personalized, targeted education. Promote multi-center collaboration and resource sharing: Partner with hospitals of all levels to co-develop and share standardized case banks, TSP training resources, and simulation facilities. This reduces implementation barriers and expands access to this advanced teaching model across obstetric education.

5 Conclusion

Integrating teacher standardized patients into obstetric situational simulation teaching—via a framework of professional clinical simulation, tiered skill training, and multi-modal quantitative assessment—effectively builds interns' clinical reasoning, practical procedural skills, and comprehensive professional competence. Supported by a rigorous multi-modal assessment system, this innovative model overcomes the longstanding ethical and resource barriers of conventional obstetric teaching. It provides a replicable, effective blueprint for reforming clinical medical education. Future research should focus on three key directions: Advance TSP specialization: Refine TSP training to build expertise in obstetric subspecialties and rare, critical emergencies, enhancing scenario simulation accuracy and relevance. Develop intelligent assessment tools: Combine virtual simulation and artificial intelligence to reduce case bank maintenance costs and improve the efficiency of multi-modal assessment. Expand multi-center, long-term research: Enlarge sample sizes and conduct multi-center, follow-up studies to verify the model's applicability and long-term effectiveness across different teaching settings and hospital levels. This work will drive obstetric education toward greater precision, standardization, and alignment with competency-based medical education principles—ultimately improving the quality of future obstetric clinical practice and patient care. **To Cite**

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