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Mini Review

Optimizing On-The-Job Training in Obstetrics and Gynecology Fellowship: A Learning Theory-Based Framework for Competency Development

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Abstract: *In Pakistan, the current on-the-job training (OJT) model for Obstetrics and Gynecology (Ob-Gyn) fellowship programs primarily follows an apprenticeship-based framework. While this model offers experiential benefits, it presents notable challenges in standardized competency development, structured mentorship, and consistent feedback, thereby affecting training quality and skill acquisition.* ***Objective:*** *To evaluate the effectiveness of the existing OJT model in Ob-Gyn fellowship training in Pakistan using established learning theories and to propose a structured framework for optimizing training outcomes.* ***Methods:*** *A qualitative literature review was conducted to assess the existing OJT model through the lens of competency-based medical education, experiential learning theory (Kolb), and social learning theory (Bandura). Sources included peer-reviewed journals, academic reports, and international training guidelines. The analysis focused on identifying strengths and gaps within the current system. A framework for training enhancement was subsequently developed, incorporating principles of structured mentorship, simulation-based education, standardized rotations, and objective assessment tools.* ***Results:*** *The review revealed that while the current OJT model aligns well with experiential and social learning theories, it suffers from critical gaps. These include non-uniform case exposure, limited use of simulation technologies, inconsistent formative feedback, and lack of standardized evaluation metrics. The proposed framework includes structured mentorship programs, integration of simulation-based modules, objective assessment criteria (e.g., DOPS, OSATS), and technology-assisted learning platforms, all aimed at enhancing trainee competence and aligning with international best practices.* ***Conclusion:*** *The OJT model in Ob-Gyn fellowship training in Pakistan can be significantly strengthened by adopting a hybrid approach. Integrating simulation-based education, structured feedback systems, standardized competency assessments, and enhanced mentorship will bridge existing gaps and elevate the training program to meet global standards.*

Keywords: Education, Medical, Graduate Internship and Residency Obstetrics and Gynecology Clinical Competence Simulation Training

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Introduction

Obstetrics and Gynecology fellowship training in Pakistan employs an OJT model in accredited institutions under the College of Physicians and Surgeons Pakistan (CPSP) (1,2). This approach immerses trainees in clinical settings where they transition from novices to independent practitioners through guided observation, supervised practice, and gradual autonomy (3). While effective in skill acquisition, variability in case exposure and feedback mechanisms affects competency development (4). The objective of this study is to evaluate the OJT model's effectiveness through learning theories and propose an improved framework for competency development.

Learning Theory Evaluation of OJT Model

Social Learning Theory

Social learning theory states that skill acquisition occurs through observation and modeling (5). The mentor-mentee relationship is integral, as trainees develop proficiency through imitation and feedback. However, variations in mentorship quality across training centers reduce the consistency of learning outcomes (6).

Experiential Learning Theory

Experiential learning follows cycles of concrete experience, reflective observation, conceptualization, and experimentation (7). While OJT supports hands-on experience, unstructured reflection limits the effectiveness of learning cycles (8).

Situated Learning Theory

Situated learning suggests that knowledge is best acquired in authentic contexts (9). The OJT model benefits from this approach, as trainees work in real clinical environments. However, variability in case exposure may hinder the full realization of expertise (10).

Deliberate Practice

Deliberate practice emphasizes repeated skill refinement through structured feedback (11). Inconsistent mentorship and the lack of structured assessment reduce the effectiveness of deliberate practice within the OJT model (12).

Advantages of the OJT Model

1. **Real-World Clinical Exposure**: Allows direct engagement with diverse obstetric and gynecological cases (13).
2. **Mentorship-Based Skill Acquisition**: Provides trainees with guided learning from experienced consultants (5).
3. **Cost-Effectiveness**: Utilizes existing healthcare infrastructure without additional training expenses (14).
4. **Team-Based Collaboration**: Encourages interdisciplinary learning and decision-making (15).
5. **Competency Development through Authentic Practice**: Enables procedural refinement in real patient settings (16).

Challenges in the Current OJT Model

1. **Inconsistent Case Exposure**: Differences in hospital rotations limit uniform training experiences (17).

2. **Unstructured Feedback Mechanisms**: Subjective evaluations hinder standardized skill assessments (18).
3. **Hierarchical Barriers in Mentorship**: Workplace politics may obstruct the mentor-trainee dynamic (19).
4. **Lack of Integration of Simulation-Based Training:** Absence of structured virtual or physical simulations restricts competency enhancement (20).

Framework for Improvement

1. **Standardizing Clinical Exposure & Rotations**
   - Implement structured rotations to ensure exposure to a range of cases.
   - Introduce electronic logbooks for competency tracking.
   - Define minimum benchmarks for procedural competency in residency curricula.
2. **Enhancing Feedback & Assessment**
   - Conduct Objective Structured Clinical Examinations (OSCEs) for competency assessment.
   - Use validated Entrustable Professional Activities (EPAs) for structured evaluations.
   - Incorporate multisource feedback mechanisms from consultants, nurses, and peers.
3. **Strengthening Mentorship & Supervision**
   - Establish long-term mentor-trainee pairings for consistent guidance.
   - Conduct faculty workshops to improve mentorship efficacy.
   - Implement structured biannual review discussions between mentors and trainees.
4. **Integrating Simulation-Based & Technology-Assisted Learning**
   - Set up high-fidelity simulation labs for procedural practice.
   - Utilize virtual reality (VR) and augmented reality (AR) surgical training.
   - Incorporate AI-assisted surgical guidance systems for enhanced precision.
5. **Promoting Psychological Safety & Supportive Learning Culture**
   - Develop policies ensuring open feedback without hierarchical bias.
   - Introduce peer mentorship initiatives to foster collaborative learning.
   - Conduct team-building workshops to improve leadership and communication.
6. **Institutional Standardization & Policy Reform**
   - Establish national competency benchmarks through CPSP.
   - Conduct external audits to evaluate program adherence to training guidelines.

Implement data-driven policy reviews based on trainee performance metrics.

Conclusion

The OJT model in Ob-Gyn fellowship training is valuable for skill acquisition but faces inefficiencies affecting competency standardization. This study analyzed its effectiveness through learning theories and identified structured training gaps. The proposed framework integrates standardization mechanisms, feedback-driven assessments, simulation-based enhancements, and mentorship programs to optimize competency development. Future policy reforms should prioritize evidence-based interventions for competency-based medical education, ensuring trainees meet international standards in surgical proficiency.

Declarations

Data Availability statement
All data generated or analysed during the study are included in the manuscript.

Ethics approval and consent to participate
Approved by the department concerned. (IRBEC-MMNCS-0331d-24)

Consent for publication
Approved

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Conflict of interest

The authors declared the absence of a conflict of interest.

Author Contribution

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All authors reviewed the results and approved the final version of the manuscript. They are also accountable for the integrity of the study.

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