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Review of the 'Women's Diseases and Infertility' Course in the Midwifery Bachelor's Curriculum Based on the Kern Curriculum Revision Model

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Dear Editor,

Medical education, particularly in specialized fields such as midwifery, requires continuous curriculum development to ensure alignment with evolving healthcare needs, scientific advances, and societal changes. In the field of women's health, the "Women's Diseases and Infertility" course plays a central role in preparing competent midwives capable of addressing complex reproductive and gynecologic issues. However, the current curriculum, last revised in 2012, may no longer adequately address modern clinical realities, especially considering recent advancements in digital health, patient-centered care, and global reproductive health priorities (1, 2). While various challenges — such as outdated content, limited emphasis on digital literacy, and insufficient integration of evidence-based resources — remain, the increasing accessibility of technological tools also presents an opportunity. For instance, equipping students with skills to use applications like UpToDate or PubMed can significantly enhance their clinical reasoning and decision-making capacity. Therefore, there is a pressing need to reassess the structure and delivery of this core course systematically.

In the current Iranian midwifery curriculum, the three-credit course titled "Women's Diseases and Infertility" is a core component aimed at equipping students with the necessary clinical knowledge to manage gynecological conditions and fertility-related issues. However, the extent to which this course aligns with recent clinical guidelines, modern educational strategies, and technological competencies remains unclear. Although the inclusion of a health information systems course in the midwifery bachelor's program in Iran reflects an effort toward digital readiness, its scope is limited and not directly integrated into core clinical subjects such as gynecology and infertility. In contrast, countries like Ghana have more directly embedded computer literacy within clinical training. These observations indicate that while foundational steps have been taken in Iran, there is a clear need to revise and modernize key courses — particularly the "Women's Diseases and Infertility" unit — to better integrate evidence-based content and digital competencies in line with global trends and national needs.

The purpose of this study is to critically review and revise the "Women's Diseases and Infertility" course in the undergraduate midwifery curriculum using Kern's six-step approach to curriculum development. The goal is to improve the course's relevance to current clinical practice, enhance its pedagogical effectiveness, and incorporate digital competencies that reflect contemporary educational standards.

Research Question

How can the "Women's Diseases and Infertility" course in the midwifery undergraduate curriculum be revised — using Kern's six-step approach — to better align with modern clinical competencies, technological

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integration, and global trends in women's health education?

Steps of Curriculum Revision Based on Kern's Model

1. Problem identification and general needs assessment: Identify the gap between current student competencies and the desired standards in women's health and infertility care.

2. Targeted needs assessment: Analyze the specific needs of midwifery students, faculty, and stakeholders through surveys, interviews, or review of exam results and feedback.

3. Goals and objectives: Define clear learning objectives for the course, including knowledge, skills, and attitudes required to manage women's diseases and infertility effectively.

4. Educational strategies: Select appropriate teaching methods (e.g., case-based learning, digital tools, skills labs) to match the objectives and learners' needs.

5. Implementation: Integrate the revised course into the midwifery curriculum, ensuring faculty development and resource allocation.

6. Evaluation and feedback: Assess the effectiveness of the course through student evaluations, performance metrics, and feedback mechanisms for continuous improvement.

The World Health Organization (WHO) considers digital literacy and planetary health essential, emphasizing the importance of digital technology in achieving universal health coverage and improving health outcomes. To achieve this goal, it is necessary for the nursing and midwifery workforce to be digitally empowered and acquire the skills required to engage with digital technologies (3). In 2016, the Ghana Nursing-Midwifery Board, during the curriculum revision process, designed a course on the application of computers in healthcare for nursing-midwifery students, enabling them to be prepared for clinical education and practical work in various healthcare institutions (4).

Today, technological tools are accessible to all young people, but the failure to use these tools to facilitate learning and develop students' skills represents a significant gap. For example, teaching students how to search for and access articles and the latest guidelines through applications like UpToDate can empower them to independently access reliable resources to address clinical questions for themselves or their patients (5-7).

Methodology

To revise the "Women's Diseases and Infertility" course, a series of structured workshops were conducted involving curriculum experts, faculty members, and clinical practitioners. These workshops aimed to:

- Identify gaps in the current curriculum

- Integrate updated clinical guidelines and technological competencies

- Develop revised learning objectives and content

The workshops were not part of the student training but were designed as collaborative sessions for curriculum development and validation. The evaluation of the revised curriculum employed multiple, clearly defined methods at different stages:

- Formative evaluation: Focus group discussions and surveys with faculty and students to gather feedback on draft content and teaching methods

- Summative evaluation: Standardized written exams and clinical skill assessments to measure student competency post-implementation

- Process evaluation: Continuous monitoring through course evaluations and instructor reports to ensure alignment with goals

These layered evaluation methods provided comprehensive data to iteratively refine the curriculum.

Application of Kern's Model in This Study

The activities conducted in this study were based on the Kern model, as follows:

1. Preparation: A thorough study of the midwifery curriculum, systematic searching and review of literature, and a comparative analysis of the Iranian midwifery curriculum with those of various countries were conducted, along with a review of the latest changes in midwifery curricula worldwide over the past five years.

2. Analysis of the situation and methodology adaptation: This analysis led to the identification of new topics that needed to be included in the curriculum. These topics included midwives' perspectives on reproductive rights and childbirth, empowering midwifery students to meet labor market needs (such as sexually transmitted diseases, HPV vaccination guidelines, modern methods, and technologies for

treating infertility), and modern approaches for accessing credible and up-to-date online academic resources.

3. Implementation: Activities in this stage included: Providing links to various articles in the course slides for class viewing, providing links to useful procedural training videos in the slides for class viewing, delivering a lecture on adult HPV vaccination, and more.

4. Evaluation: The impact of these changes was continuously assessed throughout and after the course. Feedback was collected from students after each part of the process to evaluate the effectiveness of the changes and the new content. Tools such as questionnaires, interviews, written and practical tests, and performance analysis during workshops were used for the evaluation.

The revision of the midwifery curriculum is an effort to maximally meet the needs of midwifery students and graduates in theoretical knowledge, attitudes, practical skills, and research competencies. The goal is for midwives to be equipped with specialized knowledge, ethical and positive attitudes, and the ability to use modern technologies to effectively respond to societal needs and address the health requirements of women in the country.

Based on the title and research methodology, the present study aims to critically analyze and update the midwifery curriculum to better equip students and graduates with the essential knowledge, skills, and attitudes needed in both theoretical and practical aspects of midwifery. The process, following the Kern model, involved comprehensive preparation through a thorough review of global and local curricula, followed by an in-depth analysis of emerging topics that should be included in the curriculum. These topics focus on current issues such as reproductive rights, infertility treatments, and the use of digital technologies in healthcare. The implementation stage emphasized integrating these changes through interactive tools like online articles, videos, and lectures. Finally, continuous evaluation through feedback and performance analysis ensured that the revised curriculum was both effective and responsive to the evolving healthcare landscape. This revision not only addresses current needs but also empowers midwives to contribute meaningfully to improving women's health and responding to social needs using cutting-edge knowledge and ethical practices.

Footnotes

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