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SECONDARY, VOCATIONAL AND HIGHER EDUCATION PEDAGOGY

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MEDICAL EDUCATION AND PROFESSIONAL TRAINING UNDER MARTIAL LAW

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The war has substantially changed the conditions under which higher medical education institutions in Ukraine operate [2]. It has had a significant impact on institutional functioning, the educational process, and students' future careers, while also creating numerous challenges and limitations for educational

institutions, students, and teaching staff. Wartime conditions require flexibility, creativity, and cooperation among all stakeholders to ensure safety and continuity of the educational process [1]. Distance learning, which was widely implemented and tested during the COVID-19-related quarantine restrictions, has become one of the principal forms of education for students in both secondary and higher education. However, distance learning under wartime conditions differs fundamentally from that experienced during the quarantine period. It provides opportunities to stay connected, communicate, collaborate, continue learning, and maintain a sense of purpose despite challenging circumstances [8].

Distance-learning platforms are effective educational tools that help diversify the learning process and support students' development [10]. Zaporizhzhia State Medical and Pharmaceutical University (ZSMPhU) uses modern distance-learning approaches in the training of final-year students of the First and Second Medical Faculties, including students enrolled in the Pediatrics program, as well as students of the International Faculty [4, 11, 12].

Currently, the educational process at ZSMPhU is organized using technology-enhanced learning. It combines classroom-based teaching with synchronous online learning, supplemented by asynchronous activities and full audiovisual interaction via Microsoft Teams. At the Department of Obstetrics and Gynecology, this format enables comprehensive in-person and online classes to be conducted in both Ukrainian and English.

Blended learning is particularly important for students residing in Zaporizhzhia who are able to attend classes in person. These students have the opportunity to participate directly in clinical rounds and observe clinical activities in operating rooms and delivery rooms. Traditionally, each class includes an explanation of the key concepts specified in the curriculum and an analysis of clinical cases. The Department has developed case-based test items modeled on the "Krok 2" Integrated Test-Based Exam and aligned with the relevant curriculum topics. Test items and clinical cases are used to facilitate learning. Clinical cases simulate real-life obstetric and gynecological situations and allow students to achieve learning objectives related to professional competencies. Ongoing assessment throughout the course also helps identify topics that require additional time and attention.

Teaching is consistently supported by visual materials and presentations, including presentations prepared by students as part of their independent study assignments. At the end of each class, students are assessed not only through oral questioning but also through tests administered using the Assignments feature in Microsoft Teams. At the end of each course cycle, a final assessment in Obstetrics

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and Gynecology is conducted, followed by an individual review of errors and feedback for each student.

To support student learning, ZSMPhU departments continuously update the electronic library of educational materials, which contains digital educational content as well as the available instructional and methodological resources for each discipline.

One of the major limitations of practical medical training is that the nature of medical education makes distance learning particularly challenging for laboratory activities, clinical skills training, and direct interaction with patients [6]. Therefore, one approach to improving the quality of medical training is the introduction of innovative educational technologies, particularly interactive teaching methods such as case-based learning. This creates a need to develop clinical cases that allow students to analyze clinical decision-making in critical situations [13]. This method enables teachers to integrate theoretical knowledge with practical skills, thereby contributing to the development of professional competencies among medical students.

One component of practical training at ZSMPhU is the Body Interact virtual patient simulator. Using this platform, students can examine a virtual patient, communicate with the patient, order appropriate diagnostic tests, prescribe treatment, establish a diagnosis, and subsequently receive feedback on their clinical decisions. The Department of Obstetrics and Gynecology uses Body Interact in the educational process as a virtual patient simulation platform that integrates knowledge and skills from different clinical disciplines.

In contemporary medical education, virtual patient simulation represents an innovative technology-enhanced educational approach that may contribute to improving the quality of healthcare delivery [3, 9]. The future of obstetrics education lies in combining traditional clinical training with innovative educational approaches. Clinical training facilities, the expertise of experienced teachers, and direct interaction with patients remain invaluable. At the same time, they are increasingly complemented by modern educational tools, including simulation equipment, interactive videos, interdisciplinary seminars, and collaborative projects [7].

Simulation-based education is an essential component of medical training, enabling learners to perform clinical tasks and procedures in accordance with established standards and requirements for healthcare delivery [5]. Therefore, the active use of interdisciplinary simulation and training centers that provide a safe learning environment is a promising approach, as these centers allow students to practice clinical skills under the direct supervision of teaching staff.

For this purpose, ZSMPPhU has established a modern interdisciplinary training center equipped with mannequins and simulators for practicing clinical skills in the principal medical disciplines [14].

Professional competence in future physicians encompasses not only theoretical knowledge but also essential communication and practical skills. Students, and subsequently medical interns, gain valuable experience using modern simulation technologies at the training center throughout their studies at the Department of Obstetrics and Gynecology.

According to the established schedule, students are required to attend the obstetrics and gynecology section of the training center, which is designed to simulate a delivery room. Its key component is the NOELLE S550 maternal and neonatal birthing simulator. This simulator allows both normal and complicated labor and delivery to be reproduced, including different fetal positions and presentations. Its abdominal wall also enables students to practice Leopold maneuvers.

Currently, student training also involves the Advanced Gynecological Training Simulator, Female Pelvis, Pelvimetry Demonstration Simulator Pelvis Model, GD/F8 Vacuum Delivery Simulator, as well as a simulator for the examination and diagnosis of breast diseases.

Assessment of graduating students' academic performance is conducted in accordance with the current regulatory framework and the recommendations of the Cabinet of Ministers of Ukraine, the Ministry of Education and Science of Ukraine, and the Ministry of Health of Ukraine regarding the assessment of higher education students.

Order No. 900 of May 24, 2024, On Approval of Amendments to the Procedure, Conditions and Timeframes for the Development and Administration of the Unified State Qualification Exam and the Criteria for Assessment of Its Results, introduced amendments to the procedure, conditions, and timeframes for the development and administration of the Unified State Qualification Exam (USQE), as well as to the criteria for assessing its results.

The USQE includes test-based and practical components. As noted above, one of the methods used to assess the clinical competence acquired by graduates of higher education institutions is the Objective Structured Practical (Clinical) Examination (OSP(C)E). Its purpose is to determine whether the program learning outcomes achieved by students meet the requirements of the relevant educational or educational-professional program in areas that cannot be adequately assessed using standardized testing.

During the academic year under consideration, the examination consisted of ten stations administered via Microsoft Teams for students of the First and Second



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Medical Faculties and the International Faculty enrolled in the Medicine program and studying in either Ukrainian or English, as well as for students of the Second Medical Faculty enrolled in the Pediatrics program.

The ninth station was entitled “Standardized Patient in an Obstetrics and Gynecology Clinic.” When completing one of ten clinical scenarios, the student receives an assignment on a personal computer and communicates with a simulated patient portrayed by a moderator. The student obtains and evaluates relevant medical history, analyzes clinical examination findings and the results of laboratory and instrumental investigations, synthesizes the findings into clinical syndromes, and formulates a diagnosis. The final stage involves determining an appropriate patient management strategy and providing recommendations regarding prevention and a healthy lifestyle.

The tenth station was entitled “Emergency Conditions in Obstetrics and Gynecology” and also comprised ten scenarios. These scenarios covered normal pregnancy and childbirth, obstetric pathology, and gynecology. Students were required to demonstrate their ability to analyze medical history and clinical examination findings, formulate a preliminary diagnosis, assess the patient’s general condition and perform medical triage, and determine the appropriate range of laboratory investigations for the relevant clinical condition.

At the final stage, students were required to demonstrate their ability to interpret laboratory and instrumental investigation results, formulate a clinical diagnosis, and determine an appropriate management strategy for the respective clinical condition.

Conclusions

Wartime conditions have significantly affected the educational process in Ukraine and have created substantial challenges for both teaching staff and students.

Distance learning has become one of the principal approaches to maintaining continuity of medical education under these circumstances. It enables the teaching process to be diversified and expanded while also supporting students’ independent learning and professional development.

The use of the Internet, virtual libraries, and multimedia resources provides access to up-to-date information from a wide range of sources and facilitates more effective acquisition of educational material.

Simulation-based education has become an important component of teaching Obstetrics and Gynecology. The use of innovative educational technologies, including Body Interact and case-based learning, enables teachers to integrate theoretical knowledge with practical training and contributes to the development of professional competencies among medical students.

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