

DOI: 10.21802/artm.2020.2.14.116.
UDC 378.147+614.253.4

OBJECTIVE STRUCTURED CLINICAL EXAMINATION AS ADEQUATE METHODS FOR ASSESSING THE PROFESSIONAL COMPETENCE FOR INTERSHIP DOCTOR

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Abstract. Providing quality training for future medical specialists is an urgent problem of our time. The state program for reforming the medical sphere requires educational institutions to train specialists who possess not only a high level of theoretical knowledge, but also a qualified level of practical skills, communicative properties. The article analyzes in detail the experience of implementing an objective structured exam (OSCE) to assess the knowledge and skills of interns on the stage of final certification in the specialty "Infectious Diseases", which was held at the Department of Infectious Diseases and Epidemiology of Ivano-Frankivsk National Medical University in 2019 and 2020. In percentage terms, the exam performance was as follows: "excellent" - 11.1%, "good" - 88.8%. Criteria for the effectiveness and objectivity of the system for assessing practical and communicative skills in the OSCE system are determined. The role of OSCE in the assessment system in medical education is described. The technique of the exam at the Department of Infectious Diseases and Epidemiology is described in detail. The expediency of introducing OSCE for conducting state certification of specialists has been proved. To evaluate the results, a descriptive-analytical method was used.

Conclusions are drawn and directions for further improving the methodology for conducting and preparing for OSCE and improving the methodology for its assessment are identified. According to the results of OSKI conducted by interns in the specialty "Infectious Diseases" at the Department of Infectious Diseases and Epidemiology, in order to optimize the examination at the preparation stage, it was decided: to form examination booklets with a sufficient database, start preparing for the exam already in the first year of training of interns paying more attention training communication skills, examination algorithms, treatment, emergency care; to evaluate the intermediate certification of interns after each thematic section using a structured exam technique; to improve the station assessment system for a more thorough differentiation of the result.

It is worth noting that during the exam at one of the stations, most future specialists had low results of passing the skills, therefore, at a meeting of the department, it was decided to carefully review the tasks of this station and make appropriate adjustments.

The use of structured response algorithms by the examiner helps to increase the reliability of the assessment, and therefore, the impartiality and objectivity of the exam and it is the objectivity of the assessment of the exam that depends on its structure (number of stations, questions).

So compared with the traditional version of clinical trials, OSKI has many positive advantages. OSKI is a reliable and impartial exam, the main purpose of which is to standardize the tasks for the examinees, which increases the commitment of the examinees because it completely eliminates the fact of the "unfortunate task". During the OSKI, not only the level of theoretical knowledge was evaluated, but also the competence of future specialists in the application of the knowledge and practice was tested. Without applying theoretical knowledge to analytical skills by interns, it is impossible to actually complete a practical task, interpret the results of the examination, establish a diagnosis, etc. A positive point is that due to the presence on the OSKI of question and answer algorithms, teachers adhere to established rules and assessment standards, can fairly evaluate the intern during a practical skill and minimize the subjective influence of the examiner on the evaluation process of the intern.

Keywords: objective structured clinic examination, doctor-intern, infectious diseases, competence.

Introduction. One of the most actual problems for today is to provide high-quality training for future doctors. State program for the reform of the medical sphere claims educational institutions to prepare specialists with not only a high level of theoretical knowledge but a competent level of practical and communication skills. [1,2].

OSCE is one of the credible ways of evaluating the practical and communication skills of future special-

ists. Examination carrying out according to OSCE methodology is a requirement for modern education around the world since the usage of answer structured algorithms by examiner helps to increase the evaluation reliability and therefore examination impersonality and objectiveness.

In January 2019 and 2020 Department of Infectious Diseases and Epidemiology workers for the first time carried out knowledge and practical skills control of

doctors-interns at the stage final certification according to OSCE methodology.

Justification of Study. The existing medical education does not fully meet the requirements of permanently changing health care system and doesn't satisfy societal expectations [1]. In order to create guarantees of medical care quality and health care specialists training International standards in medical education were developed and approved by World Health Organization and World Medical Association [2, 3, 4].

Providing all the conditions for acquiring the necessary level of practical skills is an important point in high medical education. Clinical training of students and doctors-interns is accomplished by common clinical department's problems regarding supplying the education process with topic-based patients, poor control of the quality of each future specialist objective patient examination performance.

Modern medical education trends promote the priority of professional competence and communication skills development for young doctors. The ability of specialists to successfully perform professional activity should be based on a dynamic combination of knowledge and practical skills, ways of thinking, professional qualities [3,5]. That is why the necessity to move beyond the traditional final exam to the one that will allow improving the validity, reliability, and evaluation of the future specialists' professional skills objectiveness has risen.

For the moment specifically, OSCE is one of the credible ways of evaluating the practical and communication skills of future specialists due to two main principals of this examination existing – objectiveness and structuring. The objectiveness of this examination is determined by standardized grading scale and OSCE structuring lays on the standardized scheme of performing relevant tasks that allow evaluating doctors' clinical thinking [6]. The usage of answer structured algorithms by examiner helps to increase the evaluation reliability and therefore examination impersonality and objectiveness [6,7].

OSCE was suggested to provide a more reliable evaluation of clinical competences efficiency in undergraduate and postgraduate education and described for the first time in 1972 by Ron Khardyn (Denmark) as an alternative of existing methods students' knowledge clinical efficiency evaluation [8]. Today, it is a standard method of competence determination and practical skills evaluation in Britain, the USA, Canada, Israel, and many other countries [2,3]. OSCE implementation into an existing evaluation system is a complicated process that needs a great amount of theoretical and practical knowledge [7,9]. In Ukraine, the OSCE implementation into the educational process happened after 2018 [10]. In Anesthesiology and Intensive Care Department of Shypuk National Medical Academy of Postgraduate Education, OSCE is regularly held by doctors-interns as a key part in the structure of anesthesiology primary examination of a two-year internship [4,9,11]. In Ivano-Frankivsk National Medical University the Ministry of Health of Ukraine in order to evaluate the level of doctors-interns practical skills since 2019 have started to use separate objective structured examination successful passing of which was the first stage of state certification of doctors-interns

including the ones in Department of Infectious Diseases and Epidemiology.

Aim of Study. We need to analyze the efficiency and viability of carrying out the objective structured clinical examination as a part of state certification for evaluating the knowledge and practical skills of doctors-interns majoring in the «Infectious Diseases» specialty.

Materials and Methods of Study. In January 2019 and 2020 Department of Infectious Diseases and Epidemiology workers for the first time carried out knowledge and practical skills control of doctors-interns at the stage final certification.

The objective structured clinical examination was accurately prepared and organized according to OSCE methodology by department workers. In order for doctors-interns majoring in «Infectious Diseases» specialty to pass OSCE we organized 14 practical stages that evaluated communication skills (2 stages), typical patient examination (2 stages), determination the patient examination direction according to case problem (2 stages), interpretation the results of main and additional examination methods (2 stages), diagnosis according to the photo (1 stage), prescription the ethotropic and pathogenetic therapy treatment (2 stages), medical emergency diagnosis and prescription the emergency assistance to case problem (2 stages), prescription the urgent preventive measures (1 stage).

The preparation of stages included writing the clinical tasks and scenarios, questions, taking photos, and also creating answer algorithm samples. Each stage was according to examination questions and scenarios list (5 task blocks were prepared for OSCE organization).

Study results. Before the examination carrying out, department teachers gave consultations where fully replied on questions regarding technical moments of examination conduction, targeted tasks performing algorithms, and clinical scenarios.

On the day of examination conduction doctors-interns were invited to the auditorium for rules and technical moments introduction, and an announcement about using gadgets prohibition otherwise they aren't allowed to write the examination.

The task blocks number for OSCE was chosen specifically before the examination by the head of the department in the presence of all members of the examining committee in order not to make information leak impossible. If during the examination information leak is noticed, the replacement of examination tasks block would happen. If during the examination the information leak had been noticed, the examination questions block replacement would have happened immediately. For this purpose at the planning phase, examinees' routes to each stage were included and a 15-minute interval between stages passing was clearly regularized.

10 minutes before the examination start doctors-interns according to the list came into the waiting room where each of them was given a form « Examination passing report» with last names and signatures of doctor-intern and examination committee members when each stage passing.

The examination started after the acoustical signal. For performing tasks at each stage, the appropriate

regimented time was given. За звуковим сигналом розпочався іспит. The stage for medical history collection – 7 minutes, patient examination – 10 minutes, the other stations' duration – 5 minutes. The intern was given 1 minute for task review after the acoustical signal at each stage. The minute before the main time finish doctors-interns were given warning acoustic signals and when the time for tasks performing was over doctors-interns, after the acoustic signal, they had to finish performing tasks, leave the examination room and follow the next stage. In this chronometrical order, each intern passed all the stages. The doctor-intern wrote an answer into the personal «Answer sheet» that was given separately at each stage. The evaluation at each stage was conducted by two teachers (Candidate of Medicine, Associate Professor, Teaching assistant) according to beforehand prepared correct answers samples. In order to provide reliability and objectiveness of practical activities evaluation, sample grading scales for each stage were developed. Each unit of the scale was evaluated according to three levels: 0 points – the wrong answer; 0,5 – the answer is right but not complete; 1,0 – the right answer.

The examination passing result at each stage was registered in «Evaluation form» personally for each intern and in the «Examination committee report of evaluation results» for all interns who passed the specific stage. When the work at the stage was over, the examiners signed stage passing in «OSCE passing report» by their signatures.

Finished work at all stages, doctor-intern left the department building through the back door in order to exclude contacts with other interns and transferring the information regarding tasks. After passing all stages results were discussed with putting them down the OSCE passing form. The evaluation forms of certain stages OSCE were given to responsible examiner.

In Great Britain, 70% and more percent of the right answers are considered a successful OSCE passing result. Taking into account the beginning of OSCE implementation into the doctors-interns certification system, we considered 60% of the right answers as a positive valid variant.

According to the discussion, each stage if the intern «passed» was reflected by 1 point in the intern's «General examination report». The examination accepted if 8 or more stages were passed. The number of points was transformed into mark «adequate», 10,5-12,5 – «good»; 13-14 – «excellent».

In general, the exam at the department was successfully held and according to the schedule. There was a slight time violation at the beginning of the exam, which was corrected immediately. During the exam the atmosphere was working and positive. Doctors-interns productively enough organised their knowledge and successfully completed the exam. The young doctors admitted the atmosphere to be fairly friendly and objective evaluation of the tasks was performed effectively.

As a result of an impartial assessment, an objective structured exam was passed by all doctors-interns. In percentage terms, the effectiveness of the exam was as follows: «excellent» – 11,1%, «good» – 88,8%.

According to the results of OSCE being held by doctors-interns in the specialty "Infectious Diseases" at

the Department of Infectious Diseases and Epidemiology, it was decided to optimize the examination at the preparation stage: to form examination booklets with a sufficient database, start exam preparation during the first year of internship by paying more attention to communication skills training, algorithms for examination, treatment, emergency care; to carry out the mid-term certification of the doctors-interns after each thematic section according to the methodology of a structured exam; to improve the stage assessment system for a more thorough differentiation of the result.

It is worth mentioning that during the exam at one of the stages, most young professionals had low results while passing the skill section, because of this, it was decided to carefully review the tasks of this stage and make necessary changes at the department meeting.

The discussion of the results. Therefore, compared with the traditional version of clinical exams, OSCE has many positive advantages. OSCE is a reliable and unbiased exam, the main purpose of which is to standardize the tasks for those, who are being examined, which increases the commitment of the examinees because it completely eliminates the fact of "unfortunate task".

During the OSCE being held, not only the level of theoretical knowledge was assessed, but also the competence of future specialists in the application of the acquired knowledge and practice was checked. Without the application of theoretical knowledge to the analytical skills of doctors-interns, it is impossible to actually perform a practical task perfectly, interpret the results of the survey, to diagnose, etc. A positive point is that due to the presence on the OSCE of questions and answers algorithms, teachers follow established rules and assessment standards, which allows to fairly assess the doctors-interns during the practical skill checking and minimize the subjective influence of the examiner on the evaluation process of the doctors-interns.

However, it is also impossible to deny the fact that many scholars consider it necessary to perceive OSCE as an element of the general examination [8].

Conclusions. Implementation of an exam according to the methodology of OSCE is a tool to improve the professional competencies and communication skills of future doctors. The objectivity of the exam assessment depends on its structure (number of stages, questions).

The organization and implementation of OSCE at the department did not cause any negative comments and did not form a negative attitude towards the exam by doctors-interns, which confirms the accuracy of the choice of this exam form for an objective assessment of the interns' and students' knowledge in the future. It is worth mentioning that this exam, in our opinion, is more effective at the stage of postgraduate education, considering that young professionals have more mature knowledge and the ability to use it (cognitive skills).

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УДК 378.147+614.253.4

**ОБЪЕКТИВНИЙ СТРУКТУРОВАННИЙ
КЛІНІЧНИЙ ІСПИТ ЯК АДЕКВАТНИЙ
МЕТОД ОЦІНКИ ПРОФЕСІЙНОЇ
КОМПЕТЕНТНОСТІ ЛІКАРІВ-
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Резюме. Забезпечення якісної підготовки майбутніх лікарів-спеціалістів становить актуальну проблему сьогодення. Державна програма реформування медичної сфери вимагає від освітніх закладів підготовки фахівців, які б володіли не тільки високим рівнем теоретичних знань, але й кваліфікованим рівнем практичних навичок, комунікативними якостями. У статті детально проаналізовано досвід впровадження об'єктивного структурованого іспиту (ОСКІ) для оцінки знань та вмінь лікарів-інтернів на етапі заключної атестації за спеціальністю «Інфекційні хвороби», який проводився на кафедрі інфекційних хвороб та епідеміології Івано-Франківського національного медичного університету в 2019р та 2020р. У відсотковому еквіваленті результативність іспиту виглядала таким чином: «відмінно» – 11,1%, «добре» – 88,8%. Проаналізовано необхідність та переваги впровадження такого іспиту в Україні та світі. Визначено критерії ефективності та об'єктивності системи оцінювання практичних та комунікативних навичок за системою ОСКІ. Описано роль ОСКІ в системі оцінювання в медичній освіті. Детально описано методику проведення іспиту на кафедрі інфекційних хвороб та епідеміології. Доведено доцільність впровадження ОСКІ для проведення державної атестації спеціалістів. Для оцінки результатів у роботі використано описово-аналітичний метод.

Зроблено висновки та визначено напрямки щодо подальшого вдосконалення методики проведення та підготовки до ОСКІ та вдосконалення методики його оцінювання. Використання структурованих алгоритмів відповідей екзаменатором сприяє підвищенню надійності оцінювання, а отже неупередженості та об'єктивності іспиту, і саме об'єктивність оцінки іспиту залежить від його структурованості (кількості станцій, запитань).

Ключові слова: об'єктивний структурований клінічний іспит, лікар-інтерн, інфекційні хвороби, компетентність.

УДК 378.147+614.253.4

**ОБЪЕКТИВНЫЙ СТРУКТУРИРОВАННЫЙ
КЛИНИЧЕСКИЙ ЭКЗАМЕН КАК АДЕКВАТ-
НЫЙ МЕТОДОД ОЦЕНКИ ПРОФЕССИО-
НАЛЬНЫХ КОМПЕТЕНТНОСТИ ВРАЧЕЙ-
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Резюме. Обеспечение качественной подготовки будущих врачей-специалистов составляет актуальную проблему современности. Государственная программа реформирования медицинской сферы требует от образовательных учреждений подготовки специалистов, владеющих не только высоким уровнем теоретических знаний, но и квалифицированным уровнем практических навыков, коммуникативными качествами. В статье подробно проанализирован опыт внедрения объективного структурированного экзамена (ОСКИ) для оценки знаний и умений врачей-интернов на этапе заключительной аттестации по специальности «Инфекционные болезни», который проводился на кафедре инфекционных болезней и эпидемиологии Ивано-Франковского национального

медицинского университета в 2019г. и 2020г. В процентном эквиваленте результативность экзамена выглядела следующим образом: «отлично» – 11,1%, «хорошо» – 88,8%. Проанализированы необходимость и преимущества внедрения такого экзамена в Украине и мире. Определены критерии эффективности и объективности системы оценивания практических и коммуникативных навыков по системе ОСКИ. Описана роль ОСКИ в системе оценивания в медицинском образовании. Подробно описана методика проведения экзамена на кафедре инфекционных болезней и эпидемиологии. Доказана целесообразность внедрения ОСКИ для проведения государственной аттестации специалистов. Для оценки результатов в работе использован описательно-аналитический метод.

Сделаны выводы и определены направления по дальнейшему совершенствованию методики проведения, подготовки к ОСКИ, его оценки. Использование структурированных алгоритмов ответов экзаменатором способствует повышению надежности оценивания, а следовательно объективности экзамена, и именно объективность оценки экзамена зависит от его структурированности (количества станций, вопросов).

Ключевые слова: объективный структурированный клинический экзамен, врач-интерн, инфекционные болезни, компетентность.

Стаття надійшла в редакцію 15.05.2020 р.