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The Stages of Evaluating Students in the Study of Pharmacology

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Annotation: At the present stage of development of medical education, the professional training of future doctors is of great importance. Pharmacology is one of the main fundamental disciplines that initiate the study of pharmacotherapeutic treatment of various nosologies. Mastering basic knowledge of pharmacology as an integral interdisciplinary science aimed at studying the main groups of medicines most commonly used in medicine, the dependence of the pharmacotherapeutic effect on the properties of medicines, their conditions of use and the physiological state of the body, and serves as a link between the study of fundamental sciences and the practical application of drugs to optimize pharmacotherapy of internal diseases. Therefore, an important aspect of pedagogical work is not only the optimal educational and methodological support for practical classes, but also a qualitative formative and summative assessment of students' knowledge in the study of this discipline.

Keywords: pharmacology, higher medical education, assessment methods.

Pharmacology is a basic discipline and refers to the professional training of specialists of higher education in the specialty "Medicine", is one of the most important subjects, the role of which can hardly be overestimated, since it is here that the foundations of knowledge about the basic properties, mechanisms of action, therapeutic efficacy, possible side effects and the use of the main groups of drugs are laid [1]. The training of a qualified doctor is impossible without an in-depth and at the same time specific study of pharmacology. According to WHO, medicines account for 80-85% of all medical care [2]. That is why a doctor, regardless of specialization, must know the main drugs and their pharmacological characteristics in order to ensure effective and safe pharmacotherapy. The study of the discipline "Pharmacology" involves the acquisition by each applicant of knowledge about medicines in general and the opportunity to use this knowledge further in the study of other sciences of practical medicine and, of course, in further practice [3, 4]. An important aspect is that the successful study of pharmacology is impossible without prior high-quality training in related disciplines such as physiology, pathological physiology, anatomy, clinical anatomy, biochemistry, histology and others [5]. Only a comprehensive understanding of the indicators of the norm and the mechanisms of the development of pathological processes will make it possible to understand for what purpose and what kind of drug treatment can improve the patient's condition. And also do not forget about passing the comprehensive test exam "KROK 1", which includes a large amount of tasks in pharmacology, as a basic discipline.

One of the important issues is the correct and objective control of students' knowledge. The pharmacology course provides two final unit tests, practical skills and computer test control. Undoubtedly, all three types of controls are important components, which complement each other and which we would like to consider in detail.

The final modular control includes theoretical questions on individual topics, in the form of an oral interview or discussion. The students' answers to these questions help the teacher understand to what extent and to what extent the student is guided by the characteristics of a particular group of drugs. This type of control is basic, since in parallel it is supported by situational tasks, solving which, the student must choose the right drug and write out a prescription for it indicating the optimal dosage form for use and dose. Also, this type of control shows the main learning outcomes that a student should master in the process of studying pharmacology, in accordance with the educational and professional program, namely, to know:

The group affiliation of medicines according to modern classifications;

pharmacological characteristics of traditional and new medicines, logically linking the mechanism of action with pharmacodynamics, pharmacodynamics with indications, and side effects with contraindications to the use of drugs;

depending on the characteristics of the pharmacokinetics of the drug, determine the frequency of use of the drug, its daily, course dose;

indications and contraindications to the use of drugs;

to justify an adequate dosage form in accordance with the routes of administration of drugs, etc. [6].

The next stage is the control of practical skills, which are a list of drugs included in the comprehensive test exam "KROK 1". The list is approved by the testing center and is a mandatory admission to the latest modular control. The constant updating and updating of the list of names of drugs included in the study program at the medical university is due to the fact that the number of new drugs appearing on the pharmaceutical market is growing every year, and research on the development, effectiveness and safety of new or existing drugs overwhelm the world's bibliographic databases. In addition, there is a growing understanding of the subtle mechanisms of drug action, which are extremely important for explaining the pharmacological effects of drugs.

When characterizing a particular drug, students should not only indicate the pharmacological group, mechanism of action, indications for use and side effects, special attention is paid to the specifics of use, contraindications associated with concomitant diseases and interaction with food or other drugs. drugs, in which not only the pharmacokinetic parameters often change, but also the pharmacological effectiveness of the drug, overdose or poisoning with this drug, if possible, and measures of assistance. Equally important is the study of pharmacotoxicology and specific antidotes used in acute intoxication. The list of drugs is formed in such a way that it includes representatives of all pharmacological groups, which are also included in the list of the comprehensive test exam "KROK 1".

An important aspect is that the control of practical skills is carried out in full before the final control, which allows the teacher to more objectively understand the general level of knowledge of the student.

The next stage of the final modular control is a computer test control, where priority is given to the pharmacotherapeutic use of medicines in the form of situational tasks. Solving these tasks independently or jointly with a teacher in advance in practical classes not only facilitates the process of memorizing the material, but also shows specific points of application of the acquired knowledge in clinical settings [7]. Of course, such practice requires conscious and conscientious actions of the teacher, which may be a consequence of his high professional and pedagogical competence. Of course, no test task or situational task will replace the clinical situation at the patient's bedside, but various kinds of questions allow you to practically choose the optimal drug in this situation [8]. The big mistake of students is to prepare tests by studying only "keywords", which significantly levels the process of their thinking, understanding and analyzing clinical issues. In practical classes, students should focus on studying the pharmacological characteristics of medicines and only then prepare for test tasks. It is worth noting that timing is an important point of testing, because we remember the comprehensive test exam "KROK 1", where there is always a time limit for each question, and if we take into account further training and clinical situations, they always require a quick reaction and critical thinking. For this type of control, it is quite objective and convenient to use online tools such as the Moodle distance learning server, Clastime, Kahoot and Google forms.

Of course, the main online tool that students can use for self-study has become the Moodle distance learning server. The positive characteristics of this tool are the possibility of forming a bank of test tasks in the learning mode, which allows students to determine their level of knowledge, and testing in the control mode allows the teacher to navigate the assessment process, which undoubtedly increases learning ability. training.

The diversification of the educational process, increasing the objectivity of assessment and increasing the motivation of students to learn have been achieved using other popular online tools such as Kahoot, Google form, Clastime. These interactive methods made it possible to create test tasks of varying degrees of complexity not only in text mode, but also in combination with illustrative materials. The advantages of Kahoot are the ability to use both text information and include photos, images and videos when forming questions. In addition, the teacher can determine the pace and speed of the task by setting a timer. Another alternative that is successfully used at our university is Google forms, for which students only need an Internet connection and a mobile phone. Google forms give us a wide range of uses and simplify the preparation of tasks. Created tests can be shared via email or other mobile messengers, and sessions can be shared with colleagues by giving them permission to edit. Automatic evaluation allows you to collect statistics on responses or individual participants. Another effective online tool is Clastime, a platform that allows you to bring new opportunities to the learning process, enrich, complement, and expand the educational environment. The main advantages of Clastime are: compactness and simplicity of the interface; test settings: mixing of questions, time limit, number of points per task, number of attempts; a wide range of task types, the ability to download media files; storing results in a cloud service, where the teacher has constant access to his results, and most importantly to the results of individual groups; using the service at different stages of the educational process: for training, diagnosis and control. We believe that the introduction of various online tools into the educational process not only motivates students, but also contributes to the development of their critical thinking, and for the teacher increases the objectivity of the assessment of the discipline.

Of course, it is impossible to compare or single out one of the best management methods in the learning process, since they pursue different goals and complement each other. And only a comprehensive assessment is able to solve the main tasks of the pharmacology course, namely, to provide students with high-quality theoretical knowledge on determining the group affiliation of medicines, their pharmacokinetics, pharmacodynamics, manifestations of possible side effects, overdose symptoms, and measures to eliminate them. prevention and elimination of adverse reactions, the main indications for the appointment and interaction with other medicines and the acquisition of practical skills in prescribing or correcting prescriptions for medicines in various dosage forms.

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