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## Modern Medical Higher Education Institutions in Russia

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### Abstract

Now the Russian healthcare system is rapidly changing. In this period training of future doctors is essential. In the modern conditions when highly qualified medical specialists mastering modern high-tech diagnosis and treatment methods are in demand, the improvement of the quality of training future doctors is one of the important goals of medical higher education institutions. However, the problems of medical higher education institutions are related to the organization of the educational process and limit the full achievement of this goal.

Analyzing the results of the sociological survey among practitioners and medical students revealed problems related to the professional and social adaptation of young specialists, as well as the medical personnel's unpreparedness to practice after the graduation.

Based on the conducted studies, the article has revealed the limitations that impede the development of the socially important profession – the doctor, analyzed the level of theoretical and practical training of students, and considered the organization and quality of the educational process for medical students.

The authors have formulated recommendations that contribute to improving the modern medical higher education in Russia.

**Keywords:** students, medical higher education institutions, higher education, system of training medical personnel, educational programs, medical residency, doctors, health care.

### 1. Introduction

The level of training medical personnel influences the current state of such important social sector as health care. Therefore, the improvement of the medical personnel's qualification, the system of their training, the introduction of new forms and methods of teaching are important issues. Within the "Concept of Developing Health Care up to 2020" the Russian Federation plans to improve skills of medical workers and to create a system of motivating them for high-quality work. Therefore, it is impossible not to talk about important problems related to training personnel. It is

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necessary to create a system of life-long medical education, with the level of training complying with the modern world realities. Unfortunately, the doctors' training programs are based on developing their skills to apply certain recommendations of the Ministry of Health, rather than to apply certain therapeutic algorithms that are so popular in Europe and the United States. Now the Russian system of training higher medical personnel suffers certain difficulties associated with the outdated material and technical base of higher education institutions. Even if they were modernized, there is still no free access to all equipment, and there are often difficulties related to maintaining the appropriate state of the technical base (lack of technicians). New requirements for equipping higher medical education institutions set new demands, and far from all of them can modernize the existing practical laboratories. Many of them use obsolete facilities. New competencies for the students mainly aim at forming certain skills of the personal development and improving the activity of students in the information, communication and legal areas. The content of educational and training programs does not always comply with the practical requirements set in relation to young specialists. The duration of the most important courses is shortened and reduced. In addition, it is rather difficult to integrate employees of clinical departments in medical education institutions into the treatment process. The issues on clinical bases of higher education institutions and the management of departments of clinical activity based on state and municipal medical entities have not been regulated yet.

In recent years, the system on training higher medical personnel has been considerably reformed, educational programs and teaching methods have been revised, and the time for theoretical training has been reduced. As a consequence, it is extremely important to take into account the opinion of practitioners involved in the educational process, as well as their positive and negative views about preparing and organizing the educational process for future specialists.

## **2. Discussion**

Theoretical and methodological issues, as well as the conceptual apparatus on organizing and training personnel in the health care sector are considered in the works of such Russian authors as N.V. Boldina et al. (2015), L.V. Shubtsova, N.A. Makhnova (2014), I.M. Sheiman, V.I. Shevsky (2015), L.A. Savinkina, T.S. Shepelova (2014), V.O. Schepin (2013), E.Ya. Titova (2017), P.V. Solodukha, D.N. Baranov (2018). as well as foreign researchers (Ten Cate O. et al. (2010), Mitesh S. Patel et al. (2011), P.P. Groenewegen et al. (2013)). These studies present data on the size and supply of the population with doctors and paramedical personnel in Russia and abroad, and the problems of medical staff shortages. However, in the works of the authors, personnel processes in medical organizations are not considered, approaches to the organization of the educational process in a medical university, and the readiness of students to carry out medical activities after graduation have not been studied.

With a large number of scientific developments devoted to improving the quality of higher medical education (L.P. Peshev, N.A. Lyalichkina (2017), Yu.O. Komarov (2013), N.V. Bagrova (2017), E.R. Zinkevich (2013), N.B. Naigovzina et al. (2014), V.I. Starodubov et al. (2016), D.S. Andrega et al. (2015), O.A. Gavrilyuk et al. (2017), M.A. Joshi (2012), B.M. Wong (2012), M. Tariq, S.A. Ali (2014), Liviana Da Dalt et. al. (2010), J. Pearce et al. (2015), Carrera R.M. et al. (2015), Satterfield J.M., Carney P.A. (2015), Dr Helena Ferris, Dermot O'Flynn (2015) and others), issues that reveal the restrictions that impede mastering medicine by students have not yet been fully investigated. The opinion of experts (doctors) has been insufficiently studied in the context of preparing medical students to solve professional problems. There are extremely few empirical data that reflect, on the one hand, the needs of the Russian society in medical specialists, and, on the other hand, real capabilities and abilities of medical graduates to carry out medical activities.

That is why not only the results of a survey of consumers of medical services, as well as students of medical universities, but also practicing doctors who directly carry out medical activities are of interest.

## **3. Materials and Methods**

The empirical base of the study included the results of a sociological survey carried out by the authors in June 2018 in the Tambov Regional State Health Care Institution Tambov Municipal Clinical Hospital No. 3 (TRSHCI TMCH No. 3). The sample included 28 experts (doctors involved in training of future medical staff). The purpose of this study was to assess the level and quality of

theoretical and practical training of future doctors, as well as to identify the factors that impede the development of a socially important profession – the doctor.

The results of the experts' survey show that in the modern conditions, in order to train highly qualified doctors, it is necessary to create study rooms in hospitals and clinics where students master practical skills; to provide students with the opportunity to use medical equipment during training; to assign mentor doctors who will share their experience of professional medical activity.

Besides, the authors carried out a sociological study in March-April 2018 at the Medical Institute of the Derzhavin Tambov State University. During this study 72 students (3-6 courses of study) were interviewed. This study was aimed at assessing the organization and quality of the educational process for students of the higher education institution.

The conducted research made it possible to identify a number of problems that impeded mastering medicine by students.

The results of the study were assessed by analyzing the relationship between the actual level of training of future doctors and their expectations (obtaining extensive practical knowledge, skills and experience, individual approach, teaching innovative treatment algorithms, providing relevant and timely educational references, demand on the labor market).

The authors used the counting method for Pearson's criterion  $\chi^2$  (Table 1, Table 2).

**Table 1.** The analysis of contingency tables using the Chi-square

Factorial sign	Effective sign			Sum
	satisfied	uncertain	dissatisfied	
Quality of education	28	10	34	72
Number of theoretical lessons	24	9	39	72
Number of practical classes	23	5	44	72
Practical significance of knowledge	35	0	37	72
Relevance of educational literature	30	0	42	72
The level of equipment of laboratories	20	0	52	72
Work in the specialty	40	25	7	72
Total	200	49	255	504

The number of degrees of freedom is 12. The value of  $\chi^2$  is 113.412. The critical value of  $\chi^2$  at the significance level  $p=0.01$  is 26.217. The relationship between the factor and effective signs is statistically significant at the significance level  $p<0.01$ .

**Table 2.** The analysis of contingency tables using the Chi-square

Factorial sign	Effective sign		Sum
	Good	Bad	
Theoretical training	10	18	28
Clinical thinking	8	20	28
Interest in the profession	15	13	28
Provision of training equipment	5	23	28
Total	38	74	112

The number of degrees of freedom is 3. The value of  $\chi^2$  is 8.444. The critical value of  $\chi^2$  at the significance level  $p=0.05$  is 7.815. The relationship between the factor and effective signs is statistically significant at the significance level  $p<0.05$ . The level of significance  $p=0.038$ .

#### 4. Results

The analysis of the results of the sociological survey carried out among students showed that 39 % of the respondents were satisfied with the quality of education, while almost every second

respondent (47 %) was not satisfied with the knowledge obtained at the university, and 14 % rated the quality of education as satisfactory.

In order to improve the quality of education at a higher education institution, more than 50 % of the respondents (54 %) noted that it was necessary to increase the time for theoretical training. In turn, every third student (33 %) was satisfied with the existing schedule, and 13 % stood for reducing academic disciplines.

It is necessary to note that the overwhelming majority of students (61 %) considered it necessary to increase the time spent for practical classes, and every third respondent (32 %) stated the number of practical classes was enough, while 7 % found it difficult to answer.

Practical training of students is the most important part in training specialists because at this stage they improve and systemize the theoretical knowledge they have obtained.

The results of the study show that rather many students are not satisfied with the current education system and are interested in increasing the time for theoretical and practical training rather than in its reduction and self-training. In addition, there is a gap between the knowledge obtained during the theoretical and practical classes. The students noted that almost half of the knowledge they had obtained during theoretical training was not useful when doing practical assignments. 52 % of the respondents indicated this, while almost every second (48 %) respondent did not consider it to be a problem. It is interesting that more than half of the respondents (69 %) believe that they will not need the knowledge obtained in general education disciplines. These answers indicate that there is a need in the further revision of educational programs.

In addition, the students note that the educational process is insufficiently provided with relevant educational and methodological literature. This was indicated by 59 % of respondents. The overwhelming majority of future doctors, namely 78 %, indicated the need to increase the time for studying clinical disciplines, while 22 % would like to have the opportunity to study international practices.

One of the main reasons of low clinical training is the lack of proper conditions (rooms, modern medical equipment, etc.) for practical and laboratory classes. This problem was indicated by 72 % of the respondents.

In addition, the students were asked whether they wanted to be doctors in the future. Every third student (34 %) found it difficult to answer this question. Almost one in ten (10 %) plans to be engaged in another activity, and only 56 % are sure that they will work in their specialty.

An important criterion for assessing the education quality is the demand for specialists having graduated from higher education institutions (Kabanova, Vetrova, 2018), therefore, in addition to interviewing the students, the authors carried out a sociological survey at the Tambov Regional State Health Care Institution Municipal Clinical Hospital No. 3. This hospital is the clinical base for training students of the Medical Institute.

According to the survey results, it was revealed that the level of theoretical training of trainee students was quite low. This was indicated by 64 % of the doctors surveyed. Almost every third expert (36 %) noted a high level of theoretical readiness of students.

The experts note unwillingness of future doctors to study as one of the reasons why the level of students' training is low. This is the opinion of half of the doctors surveyed (52 %). At the same time, 28 % of the respondents note that the level of students' education is low because it is free (the state must pay for their studies). 16 % of the respondents associate this problem with an inefficient system of education in the pregraduate courses (4-6 courses). 4 % of the respondents related it to dishonesty teachers.

According to the study results, 73 % of doctors are dissatisfied with the clinical thinking of young specialists. At the same time, it is necessary to note that the role of clinical thinking is very high in the doctor's professional work. Clinical thinking starts with the first minutes of communicating with the patient and continues throughout the treatment process. The analysis of the data obtained during the examination, their comparison and interpretation allow defining a preliminary diagnosis at the beginning of the study, which is based on the disease features that have already been revealed. Clinical thinking along with constructive, integrative thinking and the ability to collect anamnesis and other information about the patient is an important element of medical practice (Deberdeev, 2015).

The study also revealed that most students practicing in the hospital did not show any interest in professional activities. Almost every second expert (47 %) pointed to this problem.

In addition, the doctors note the reluctance of young specialists to fill out medical records and reporting forms. They perform this kind of activity formally and carelessly.

The experts defined the inability to provide medical students with medical equipment for practice as one of the essential problems. The overwhelming majority of the doctors surveyed (82 %) note that they cannot provide the student with the opportunity to practice independently by using the existing medical equipment because it is used for work. It is necessary to note that the remaining 18 % of doctors do not provide equipment, but they allow the student to be present and observe. Undoubtedly, the current trend reduces the level and quality of the student's practice during the learning process.

Thus, it is possible to conclude that the existing education system requires adjustments. The overwhelming majority of students and experts note the insufficiency of academic hours for theoretical and practical studies. In addition, it is necessary to note that the classes should focus not on general educational disciplines, but on clinical ones and have a practical-oriented and professionally applied nature.

## **5. Discussion**

New state education standards made it possible for a medical graduate to start an independent work in health care institutions without training in the internship. This change entered into force at the beginning of the 2017-2018 academic year. Nowadays, in order to work in a medical and preventive institution, it is enough to have a diploma of a general practitioner because students master their profession in the simulation training rooms. Recently this has been actively used in the educational process of medical higher education institutions of the Russian Federation. These changes in the education system were made to solve such acute problem as the shortage of medical personnel in the health care institutions.

However, many experts negatively regard these innovations because the previous system of training specialized medical specialists assumed the mastery of practical skills under the guidance of practitioners who had many years' experience and great opportunities in training the future doctor. At the moment, medical graduates almost completely eliminated the shortage of therapists and pediatricians, but their level of training is rather weak. The conducted analysis proves this. Many experts insist on reprovinding the internship because it could train highly qualified specialists. Its abolition caused the reduction in academic hours to study microbiology, biochemistry, physiology, and other specialized disciplines.

According to the practitioners, it would be the most rational to choose a specialty after the 4<sup>th</sup> course, i.e. after the student has obtained the basic knowledge of basic subjects, and to start mastering the chosen specialty (primary specialization) at the 5<sup>th</sup> and 6<sup>th</sup> courses, and then continue it during 2 years by studying in clinical residency. In this case, clinical residency should become an obligatory stage of training each student. This way will allow prolonging the term of training on the chosen specialty and improving clinical training.

The practical part of the future specialist's education is carried out as the simulation training on simulators that enable students to practice their skills of examining a patient. However, even subject to sufficient availability of complex and high-quality simulators for all students, they do not replace direct communication and work with patients. This is not available, although there are clinical departments in medical institutes. They provide this process. It is necessary to remember that institutions of practical public health often become clinical departments of higher education institutions. Sometimes they do not have special rooms for studies, medical equipment for educational purposes, the possibility for students to access wards and operating rooms. These factors will define clinical training of future specialists. For this, a higher education institution concludes an agreement with practical organizations, mainly with medical and preventive institutions. Although the survey shows that the institution is not able to fully participate in the training of students.

It is possible to solve this problem by transferring a number of hospitals to medical higher education institutions, where heads of hospitals will be heads of clinical departments. These training complexes should be staffed by experienced clinical professors, associate professors, assistants, whose functions should include the organization of not only curative, but also the educational process.

## **6. Conclusion**

The results of the study have shown that the majority of university graduates (70 %) do not have the required practical skills and abilities because the modern educational programs are not

enough to study the techniques that are necessary for the future doctor's individual practice. In the modern conditions, another important problem is a large number of students attending practical classes in training groups. Currently, on average there are 15 students in each group. It is merely impossible to teach everyone under such number of trainees. Each teacher can teach no more than 4 students who after the 4<sup>th</sup>-5<sup>th</sup> year of studying must be involved in the required practical or research work by medical institutions that are interested in this (Komarov, 2013).

Thus, the current system of medical higher education is not perfect. First of all, it is necessary to improve the curricula and steering documents taking into account the development of clinical thinking, to update teaching materials, to improve the work of practitioners to share experience and knowledge, to comprehensively provide medical schools with modern equipment, and to expand the list of practice bases. The goal of medical education institutions at all levels should be a system of core competencies on the issues related to their professional training based on unified approaches to medical education. It is necessary to form a clear readiness of future medical personnel to modeling highly professional competence and a desire to improve the nation's health, as a whole.

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