

The contribution of university clinics to the development of domestic medical science.

The results of the first Inter-university Conference on Internal Medicine Issues

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Abstract

This review article is dedicated to the history of university science and ways of its development in the future. The results of the analysis of medical universities publication rates in Russia and CIS countries in three leading medical journals between 2019 and 2021 are presented. The possible limitations and problems for university science development are discussed. The results of the first Inter-university Conference on Internal Medicine Issues are summarized. The unity of science, education and clinical practice is the key for the development of university clinics that serve as important platform for domestic clinical science improvement.

Key words: university clinic, publication rates, prospects.

Conflict of interest: none declared.

Received: 10.05.2022

Accepted: 2.07.2022



For citation: Mamedov M.N. The contribution of university clinics to the development of domestic medical science. The results of the I Inter-university Conference on Internal Medicine issues. International Heart and Vascular Disease Journal. 2022; 10(35): 39–48. doi: 10.24412/2311-1623-2022-35-48-52

History reference

University clinics have over a thousand-year history [1]. In the Ancient East (in the Persian city of Gondishapur in the 3rd century Common Era), an

academy was founded. This academy included the university, the library and the university hospital. This academy was built to teach philosophy, medicine, theology and other sciences [2]. The Arab caliphate

had medical student education system, where medical students participated in ward rounds and kept daily records of the patients' condition [3].

In Europe, first academic medical centers emerged during the Middle Ages and the Renaissance [4]. The University of Padua and Vienna conducted patient bedside observations in the 16th century. In the 17th century similar practice had been applied in several of universities in Holland. The Collegium chirurgicum had opened in Berlin in 1724, and two years later surgical training school opened at the famous Charite hospital in Berlin. In 1731, the Paris Academy of Surgery opened. It had trained surgeons since 1743, and for the first time they have been given equal rights with the physicians—graduates of medical universities.

The theory for clinical teaching has emerged in the second half of the XVIII century, when students not only attended the demonstration of patients, but also actively participated in patients' presentations, identified and analyzed various disease signs, discussed the diagnosis and gave their treatment recommendations [5].

Currently, foreign university clinics have two main models: collaboration between the university and the clinic; integration of the clinic into the university.

In Russia, the first medical school was established in 1653 by the Streltsy Prikaz, and in 1654 another medical school was opened by the Aptekarsky Prikaz, however, both of them were not higher-educational institutions. The first educational clinic was opened in Russia during the reign of Peter I (at the Moscow land hospital). In 1733 similar clinics opened at the land and admiralty (marine) hospitals in St. Petersburg, admiralty hospital in Kronstadt. The Moscow State University was founded in 1755 according to the project of M.V. Lomonosov and included medical faculty. In 1805, the first clinic of the Faculty of Medicine opened. It consisted of small ward with only a few beds. By 1860, there have already been 8 universities with faculties of medicine in other Russian cities [6].

In the 1930s all university clinics of the Soviet Union were transferred to medical universities, and clinical bases were transformed into regional, republican and all-Union hospitals or specialized medical centers [1]. When medical faculties gained independence and were transformed into medical universities or academies of the Ministry of Health, university clinics started active clinical and scientific work. Those medical

faculties that did not separate from universities, in most cases do not have their own clinics. These universities subordinate to the Ministry of Science and Higher Education of the Russian Federation, and its students also conduct patient bedside observations, however the relationship between clinical base and university is regulated according to the contract between these organizations. As part of the bed fund optimization program, some hospitals and research institutes have turned into the clinical bases of medical universities of the Ministry of Health of the Russian Federation and received the status of university clinics.

University clinic, in addition to educational activities has scientific, innovative and clinical programs compared with clinical hospital that mostly perform educational process.

The revival of university clinics in the Russian Federation and other CIS countries has begun at the beginning of the 21st century and is still ongoing.

The analysis of medical universities publication rates in Russian leading journals of internal medicine

Publication of the research results is an important indicator of scientific activity and quality of original works. In order to assess medical universities publication rates, we analyzed articles in three leading medical journals between 2019 and 2021. Data were taken from the official journal websites: "Therapeutic Archive", "Cardiology" and "Cardiovascular Therapy and Prevention". These journals are included into the list of Higher Attestation Commission and are indexed in SCOPUS, as well as have high impact factor. Publications from medical universities were analyzed geographically: Moscow, Saint Petersburg, Russian regions and CIS countries. According to open sources, there are 7 medical universities and medical faculties in Moscow, 6 medical schools in Saint Petersburg, 84 medical universities and faculties in Russian regions, and 27 medical schools in CIS countries.

The "Therapeutic Archive" is one of the oldest Russian clinical journals. The editor-in-chief of the journal is academician Chazova I. E., 230 articles on average are published annually in the journal. The total publication rate from medical universities was 61.5%. It is noteworthy that 35.2% of publications were from Moscow universities, 19.7%—from Russian regions, 6.6%—from Saint Petersburg. Only

4 articles from CIS countries were published in this journal in 4 years that is 0.6 % from the total number of publications.

The "Cardiology" journal has also been published since the second half of the 20th century and is considered one of the leading journals in the field of cardiology. The editor-in-chief is academician Belenkov Yu. N. About 150 articles are annually published in the journal. The total publication rate was 48.6 %. The number of publications from Moscow and Russian regions was comparable — 19 % and 20.7 %, respectively. Articles from Saint Petersburg accounted for 3.4 %, while 5.5 % of publications were from CIS countries.

The "Cardiovascular Therapy and Prevention" has significantly developed over the past years. Despite its relatively short history, the journal has high impact factor among domestic medical journals. The editor-in-chief is academician Drapkina O. M. About 130 articles are published annually by the journal. The total publication rate from medical universities was 49.7 %. The number of publications from Russian regions was 28.8 % that is almost two times higher compared to the number of articles from Moscow (15.8 %). The number of articles from Saint Petersburg and the CIS countries was comparable — 2.2 % and 2.9 %, respectively.

In general, average publication rate of medical universities in all three journals was 53.4 % that was every second article. At the same time, publications from Moscow made up to 23.5 %, from the Russian regions — 22.9 %. The publication rate of medical universities in three journals was 4 %, and from the CIS countries — 3 %.

Limitations for the development of the university science

However, experts point the existing limitations for the development of university clinics. They can be divided into three areas:

- 1) financing;
- 2) lack of personnel and educational process intensity;
- 3) the quality of scientific research.

Funding for university science consists of the following sources:

- budgetary and non-budgetary funds of the university;
- grants, including subsidies for students;

— funds from medical and pharmaceutical companies for clinical trials.

We conducted a survey among experts from Moscow, St. Petersburg, Saransk, Kursk and Omsk on the contribution of each of the above items of scientific research funding. To date, 47 % of funding consists of international studies sponsored by pharmaceutical companies. At the same time, in 31 % of cases the researches supported by various grants. Budget financing was at the third place (8.5 %). In total, 13.5 % of researches are financed by the management of medical universities, including extrabudgetary funds in 5 % of cases. These numbers can vary significantly between universities.

It should be emphasized that scientific research is carried out both as initiative (up to 25 %) and as international cooperation (6.5 %).

Experts point out that research funding is not high enough. Two main aspects can play an important role: lack of financing of our own research base and modest salaries of academic personnel.

Another problem is lack of personnel and the intensity of educational process. It should be emphasized that the main responsibility for the academic staff is the organization of educational process. The combination of this work with large advisory and lecture activity limits scientific activity. This is how burnout syndrome and employee turnover arise, and there is also lack of young specialists due to insufficient prestige of scientific and pedagogical work. It should be noted that in recent years the number of state-funded places in postgraduate studies has increased.

Another problem is the quality of scientific research that is affected by the above-mentioned personnel and financial problems. There is the need to improve the scientometric abilities among academic personnel and students.

Interuniversity conference as the platform for the experience exchange and incentive to improve university science

Considering the potential and prospects of university science, the Inter-university online Conference on Internal Medicine Issues was organized on June 9–10, 2022. The participants from 7 countries (Russia, Belarus, Kazakhstan, Uzbekistan, Kyrgyzstan, Turkmenistan and Tajikistan) took part in this event. The scientific program included 4 symposia on the issues of cardiology, internal diseases and its co-

morbidity that were allocated for the professors and academic personnel. Two symposia were organized for young scientists, where 14 speakers presented the results of their researches. Young scientists who presented their works also moderated these symposia. It is gratifying that all the reports were based on the results of original researches. The presentations were followed by lively discussion among experts and young scientists. A peer-reviewed collection of conference abstracts has been published and included 60 abstracts from 52 medical schools and faculties of medicine from the listed above countries. It can be found online at the Scientific Electronic Library. The event organizers hope that this initiative will be supported, and the format of this annual conference will expand in the future.

Prospects for the university science development

University clinics provide an opportunity for successful interaction between teachers from medical universities and healthcare workers from the clinics [1].

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Therefore, teachers can stay in touch with practical medicine, and clinicians can contribute to educational, medical, diagnostic and scientific processes of medical schools.

The combination of practical medicine and educational processes can significantly improve both the quality of education and healthcare provided for patients. Today, the university clinics productivity is primarily associated with the following aspects [7]:

- patient-centered care;
- integrated team approach;
- high quality of medical care, implementation of effective innovative medical technologies.

Thus, the unity of science, education and clinical practice is the key for the development of university clinics that serve as an important platform for the development of domestic clinical science.

Acknowledgements

The author would like to thank experts from medical universities and the Cardioprogress Foundation for their help in preparing this material.

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