

## Higher education for foreign students in Medical Academies during COVID-19 pandemic

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**Abstract. Background:** The pandemic of the new coronavirus COVID-19 has affected all aspects of modern society. The higher medical education is no exception here. The borders closure by many countries has created a situation where the education in another country became possible only in a virtual format. The way the quality of education was affected will become clear later. But the effectiveness of work in this area mainly depends on the acceptance or rejection of the new forms of education by students. A study conducted by the International Relations Office of Volgograd State Medical University in February-April 2021 was dedicated to the study of this issue.

**Aim:** To determine the projections the application of a blended format of teaching to medical students in the post-Covid period in order to optimize the development of educational programs and improve international cooperation in this area.

**Methods:** The field of study included a questionnaire developed in Google forms. The Processing of questionnaires is automated. Editing and coding of information, statistical analysis, comparative analysis, combinatorial analysis using the SPSS program have been carried out. The study was conducted at medical universities in 8 countries in different regions of the world. The article discusses research results in Russia. General population – 1835 international students for March, 1, 2021. N = 320. Confidence – 97 %.

**Research hypothesis:** The transition to online education during a pandemic allows students continue medical education with minimum interruption. In general, they adapt well in the digital environment, however, they consider its disadvantages as: the lack of direct guidance from teachers in the development of practical skills and the absence of personal contacts. In the future, the online training format can be considered as supplementary, but not the main one in the process of training of doctors.

**Results:** Practical recommendations have been developed for the development of international relations in higher medical education using blended teaching methods, both in regular and in emergency situations.

**Conclusion:** Comparing these data, we can conclude that studying in a foreign medical university is assessed by students higher than education in their own country, they value the acquired knowledge more and choose those forms of training that are most advantageous for their professional development.

**Keywords:** higher medical education, international relations, online training, offline training (face-to-face), foreign students, teachers

Submitted 16.03.2022; accepted 18.08.2022; published 10.11.2022.

Научная статья

УДК 614.251.2

doi: <https://doi.org/10.19163/2070-1586-2022-15-2-37-42>

## Вопросы обучения иностранных студентов в медицинских вузах в период пандемии COVID-19

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**Аннотация. Введение.** Пандемия нового коронавируса COVID-19 сказалась на всех сторонах жизни современного общества. Не является исключением и сфера высшего медицинского образования. Закрывание границ многими государствами создало ситуацию, когда обучение в другой стране стало возможным только в виртуальном формате. Как это сказалось на его качестве, станет ясно впоследствии. Но эффективность работы в данной сфере во многом зависит от принятия или непринятия студентами новых форм обучения. Изучению этого вопроса было посвящено исследование, проведенное Управлением по международным связям Волгоградского государственного медицинского университета в феврале-апреле 2021 г.

**Цель.** Определить перспективы применения смешанного формата обучения студентов медицинских вузов в постковидный период для оптимизации освоения образовательных программ и укрепления международного сотрудничества в этой области.

**Методы.** Полевое исследование включало анкетирование с применением Googl-форм. Обработка анкет машинная. Проведено редактирование и кодирование информации, статистический анализ, компаративный анализ, комбинаторный анализ с использованием программы SPSS. Исследование проводилось в медицинских университетах 8 стран разных регионов мира.

В статье обсуждены его результаты по России. Генеральная совокупность – 1835 иностранных обучающихся на 01 марта 2021 г. N = 320. Достоверность – 97 %.

**Гипотеза исследования.** Переход на онлайн-обучение в период пандемии позволяет студентам реализовать возможности непрерывного медицинского образования. В целом они хорошо адаптируются в цифровой среде, однако ее недостатком считают отсутствие непосредственного руководства преподавателями, формирования практических навыков и невозможность личных контактов. В перспективе формат онлайн-обучения может рассматриваться как вспомогательный, но не основной в подготовке врачей.

**Результаты.** Разработаны практические рекомендации по развитию международных связей в высшем медицинском образовании с применением смешанных методов обучения, как в норме, так и в чрезвычайных ситуациях.

**Заключение.** Полученные результаты позволяют сделать вывод о том, что учеба в зарубежном медицинском университете оценивается студентами выше, чем образование в собственной стране, они больше ценят полученные знания и выбирают те формы обучения, которые наиболее выгодны для их профессионального развития.

**Ключевые слова:** высшее медицинское образование, международные связи, онлайн-обучение, офлайн-обучение, иностранные студенты, преподаватели

Статья поступила 16.03.2022; принята к публикации 18.08.2022; опубликована 10.11.2022.

## Introduction

Online education is widely accepted in the world [1], but it should be noted that it was used either as an additional mode in the face-to-face educational courses, or as a form of self-education. In some cases - for the training of persons who, for one reason or another, could not attend an educational institution. During the COVID19 pandemic, almost all students found themselves in this position. There were 2 ways – to take a break in training while staying in lockdown, or to continue it in the only possible form – as a distance/online course. Naturally, the second way was chosen for a large number of institutions [2].

The system of international relations in the field of higher medical education has also experienced a significant change. The paradox is that the forced isolation did not deteriorate, but improved and expanded these affairs. It started an active exchange of experiences in the online educational environment, the number of free available webinars, online courses and lectures increased radically in a short time, and a leap in the development of interactive forms of educational and scientific communications took place worldwide [3].

All this suggests that the experience gained during the pandemic must be carefully analysed and used in the future. One of the sources for such an analysis is the study conducted at the Volgograd State Medical University, considering of its results have already been summarized and presented in this article.

## Study design

The development of the research program was carried out on the basis of the hypothesis presented above. Three questionnaires were developed – a) for foreign students, b) for Russian students and c) for teachers. At the same time, the last two were intended to collect data for a comparative analysis of attitudes towards distance learning and did not include a block of questions

about attitudes towards learning in another country, as in the first questionnaire. The survey was conducted from 21.02.21 to 21.04.21 in Russia (Volgograd), Israel (Tel Aviv), Czech (Ostrava), Italy (Catanzaro), Great Britain (Coventry), Italy (Pisa). At the same time, focus groups were held in the form of meetings of foreign graduates of medical universities in Russia [4]. The processing of questionnaires and the analysis of the focus groups results made it possible to formulate conclusions and develop recommendations for improving international cooperation in the process of future doctors' training [4].

## Results and discussion

Motivation in choosing a country of study plays a significant role in the formation of attitudes towards mastering a profession, so we were interested in the reasons why students chose a university in another country for their studies. The fact that 76.3 % admitted that such a decision was completely independent indicates that three quarters of the respondents are mature, independent individuals, or consider themselves as such.

We proposed to confirm or deny this conclusion during the survey. As it turned out, the role of agents in choosing a place of study is extremely small, only 1.3 % of respondents admitted their dominant participation in this process, which is within the margin of error. The experience of friends and their opinions also do not make a major impact on the choice of a place of study (2.5 %). But parents are more actively involved in the formation of attitudes towards studying abroad (13.8 %), which is not surprising. Moreover, it can be assumed that a certain part of the students, who consider their choice to be completely independent, to one degree or another were influenced by the opinion of their parents.

Since most of the students made the decision to study abroad independently, it was logical to ask them about the reasons of this choice. The decisive factor was the desire

of young people to travel, to meet new places, new people (37 %). Can this be interpreted as a manifestation of social mobility typical for this age or is it a rational decision to change the place of residence in general? This question can also be answered by applying the combinatorial method of the response analysis. We do not dwell on this here, since there is still no description of the overall picture of social changes in the life of students that are associated with studying in another country.

About a fifth of the respondents are convinced that the medical education system abroad is better than in their country (20.3 %). This answer cannot be recognized as reliable one, since it is based on other people's opinions, the applicants judge on their own experiences in their countries only. In order to determine whether this opinion changed in the course of study, it was also necessary to apply the combinatorial method, to look at the distribution of this answer among junior and senior students. We do not dwell on the results here for the above reason.

There is another interesting fact. The list of answers included test options for the data that was obtained when answering the first question. It turned out that 8.1 % of the respondents named the parents' desire as the reason for admission to a foreign university, while when answering the first question, a reference to the parents' opinion was present in the answers of 13.8 % of the respondents. We are not inclined to view this as a contradiction, since a motive and the reason for the move may differ.

The influence of the parents' choice was also found when answering the third question – about the choice of this particular country for higher medical education (9.4 %). But here the role of the agent is already more clearly visible (5.6 %), which was insignificant, not to say doubtful, when answering the first question. It is obvious that at the first stage (making a fundamental decision about studying abroad) of selection of a foreign university, agents are ineffective, while at the second stage (choosing the country of study) their role is already recognizable. And the main role in the choice of the country of study is played by three main factors: a) the quality of education (25.6 %), financial considerations (23.1 %) and personal relations (21.6 %). It is important, that professional interests of students prevail while choosing a national model of higher medical education, but they are only 2.5 % higher than the number of those who were guided by purely financial considerations in their choice of a particular university. There is a danger that the competition of universities in attracting foreign students may turn into knowledge trading, where the winner is not the one who provides high-quality knowledge, but the one who applies price dumping.

In our study, the test question, in order to define whether those who had chosen our country got disappoint-

ed in the quality of education, the respondents were asked if they were not disappointed in their decision. It turned out that only 5.6 % were disappointed, who doubted the correctness of the choice – 3.1 %, and 84.1 % recognized it as correct, and 64.4 % are sure that they got what they wanted, and 19.7 % are inclined to the correctness of the choice made. We do not present here the distribution of answers by course and country, since this is the task of the second stage of the study and a separate publication will be dedicated to the analysis of those details.

But it is possible to determine the reasons for such a positive assessment even now on the basis of the data based on the answers to the next two questions of the questionnaire. The first one is about what students like in a foreign country and in the learning process. And the second – "mirror", about what they do not like. Naturally, if the answers are reliable, an inverse correspondence in the number of answers should be revealed. Is it so?

Not everyone answered this question, but there could be several answer options, we have analysed them. The results showed that respondents give the highest rating to the institution of higher education in which the educational process takes place. 60.9 % of respondents like the Medical University the most. This is a significant figure, since mastering the profession of a doctor is the main goal of staying in the country. But what exactly do the respondents consider attractive at the university? No, these are not accommodation conditions (only 29.1 % are satisfied with them). And not the organisation of the educational process (30.6 % consider it good). Most of all, students like their lecturers (46.6 %). Only 12.2 % of respondents are dissatisfied with them. And here the ratio of the assessment of teachers and the assessment of clinics for practical classes draws attention. The state of the clinics does not inspire optimism for foreign students (18.8 % of positive assessments), while the teachers, on the contrary, are rated highly. A **conclusion** can be made *that the basic value of the learning process is the personality of the teacher, therefore, in order to improve the quality of education, it is necessary not only to create conditions for the normal work of teachers (clinics should be worthy of those who work in them), but also to maximize personal contacts between students and teachers.* The latter cannot be provided by distance education, which will be displayed below.

It is interesting that our students consider the possibility of learning a new language (53.8 %) as the second place among the priorities of studying abroad, only 13.8 % consider learning a new language burdensome and undesirable. Many assessed positively the process of familiarizing with the culture of a foreign country (46 %), kindness and openness of people (45.6 %). At the same time, 6.6 %

of them have not adapted in a new culture, and 8.4 % did not adapt to communication with local residents.

It should be noted that mainly representatives of Arab and Asian countries study at the university, there are also some students from Africa and Latin America, so it is not surprising that they feel comfortable enough in the south of Russia, which is reflected in a large number of positive reviews about the climate of the host country (45.3 %). Although, dissatisfaction with the climate was expressed by 27.8 % of respondents.

In general, the answers to the "mirror" questions confirmed the reliability of the answers to the direct question. The most interesting thing was to find out the configuration of the holistic perception of their stay in a new country, in a new educational institution, communication with new people of foreign students. Best of all, the image of the complex of these relations is demonstrated by the extreme points of the rating scale: "I like everything" and "I do not like everything». Respondents are often unable to prioritise the proposed options for value judgments. Or they can, but consider it insufficient.

Then they resort to choosing these "extreme" options. In our study, the complex of their feelings from staying and studying in Russia and specifically at the Volgograd State Medical University was noted as positive by 27.5 % of the respondents, and as negative by 3.4 %. Comparison of these data with the number of positive and negative answers to the question of the correctness of the decision to study in a particular Russian university, which we commented on above, confirms the need to expand this form of educational contacts between countries. Moreover, 70 % of the respondents answered negatively to the question of their desire to go to study at another university.

But among the answers to the question about the preferred place of study, there were answers (18 people) that it would be nice to change the country, but stay at this university to study. How? Naturally, this means online training. And since the COVID19 pandemic made this form of education the only one possible under quarantine conditions in many countries, it was impossible not to find out the students' impression of the advantages or disadvantages of online education. It also made sense for the selection of optimal educational models for international students in the future. Accordingly, some of the questions in the questionnaire related to the perception of the virtual educational environment by students were detailed. At the same time, the level of competence of the respondents was initially determined. It turned out that almost 60 % of students have online learning experience, which made it possible to obtain fairly complete data. We used a comparative method when collecting data: we compared the answers of foreign students, Russian

students and teachers to the questions that were identical in the questionnaires for these three groups.

The overwhelming majority of Russian students are already accustomed to distance learning (87.5 % consider themselves, to a greater or lesser extent, adapted to it). At the same time, those who are fully adapted are 22.3 % more than those who consider themselves not quite adapted, but still "kind of" adapted. Foreign students lag slightly behind: 56.6 % consider themselves fully adapted to work in a digital environment, 11 % have almost adapted, 16 % of respondents are experiencing difficulties. Note that the survey involved foreign students from 20 countries. The level of digital culture in those countries has significant differences. But it is a good indicator that two-thirds of the respondents to work in a virtual environment feel adapted to the online education.

This indicator differs significantly from that of teachers, who in 40.3 % of cases consider themselves insufficiently adapted to the remote version of educational activity, which is 14.6 % more than those who have fully adapted. This situation is quite understandable not only due to the fact that students represent a generation of digital civilization, but also because the teachers have a higher level of self-criticism and their self-esteem is more balanced than students who are experiencing a period of self-determination after the crisis of growing up (from 18 to 24 years according to Kohlberg) ... But one conclusion from these data can be established with a high degree of certainty: students have a willingness to accept new educational forms, which contributes to the success of its implementation.

In the view of the data obtained from the answers to the previous question, it seems logical that Russian students consider themselves more prepared for the introduction of distance learning than teachers. This, basically, coincides with the opinion of teachers (55.7 %), although, students are more convinced of their adaptability (71.1 %). Foreign students expressed an opinion close to the assessment of teachers – 56.5 % considered themselves better prepared to work in a virtual environment than teachers. It should be noted here that language difficulties could have influenced the choice of the answer, which in a latent form contained an assessment of the teachers' work.

Students and teachers are quite united in considering lectures as the most suitable form of learning for online education. 69.1 % of teachers want to lecture online, while 87.4 % of Russian and 71.6 % of foreign students want to listen to such lectures. This, once again, brings us back to the idea of checking the quality of lecturing. In general, the positions of students and teachers on the types of educational work that can be defined as the most suitable for online learning are very similar, given that students are more explicit in their self-evaluation. But

there are three items where the opinions of teachers and students differ. This is the attitude towards credits, exams and work off. Students more often cite the exam as the most acceptable type of educational work online (16.7 % of Russian and 24.4 % of foreign ones). And only 4.1 % of teachers think the same way, i.e. this is slightly higher than an observational error level.

There are differences between Russian and foreign students in terms of attitudes towards credits – 26.5 % of Russian students prefer to take them remotely and only 7.8 % of foreign students agree with it. More than half of Russian students (53.3 %) want to download the assessments online, while teachers agree to accept it in 32.2 % of cases. But among foreign students, only 21.3 % of respondents consider the online form to be suitable for handling their assessments. Here the position of teachers is clear – they receive more information through personal contact with the student and can, potentially, more objectively assess not only their knowledge, but also the style of thinking, erudition, ethical background, which is certainly necessary in the preparation of future doctors. The logic of students is based on the fact that it is more convenient to submit an assignment in digital form, the answers are strictly limited by a computer program. For example, answers written during the interim certification are limited in scope, it is simply impossible to exceed it. The response frames are defined by a window on the display. And, it is well known, the more a student talks, the higher the risk of errors and inaccuracies is in their answer. In addition, the distance form, potentially, leaves room for plagiarism, although only a well-trained computer science student can take advantage of it. Unfortunately, the local experience revealed that there are quite a few of them here. But foreign students view the situation differently – same language difficulties, as mentioned above do not allow them to be sure of the correctness of their written answer, they have doubts that the teacher will understand them. They feel that in a personal conversation with the teacher, they can explain what you wanted to state in the assignments. In other words, in difficult cases, the teacher themselves can suggest the correct selection of words. And in general, a verbal answer in a face-to-face communication is an excellent language practice.

Such an interpretation of the foreign students' answers would be correct if, it is backed up by "mirror" questions about the type of educational work they consider as not suitable for online learning, 15.9 % of the surveyed foreign students would not mention extra hours requires for studying. In other words, they do not want to see this type of educational work either offline or online. The position is so obvious that the topic of study hours required for foreign students in a medical university can be separately considered by specialists in educational methods.

Test questions on the acceptance/ rejection of certain modes of distance medical education were formulated in terms of modal logic to confirm / refute the stability of respondents' attitudes towards a certain type of behavior.

If we talk about the emotional assessment of online learning, then a difference of 13.2 % between the choice of personal, even mundane, interests (85.0 %) and educational interests (72.2 %) should be noted. Of course, this distribution can be explained by the fact that we are dealing with young people for whom the attachment to home and relatives has a great influence on their whole life. But if we turn to the tasks of our research, then on the basis of the data presented, we can conclude that distance learning for foreign students is effective when they stay in their own country.

In a survey of Russian students, the distribution of preferences was similar, although they were less active in answering this question. 43 % were satisfied that during the online learning period, there was no need to waste time on numerous travels to classes. But the teachers were less happy with this opportunity (25 %). This is understandable, because a teacher usually has one workplace, and the schedule requires a significant number of movements between classes locations from students. As for improvements of the education quality identified by the introduction of online courses, the Russian students do not have a formed position, this is evidenced by a very small percentage of those who noted educationally significant points (15.7 %). Among teachers, the corresponding points were noted by 40.8 %.

As we can see, foreign students are much more active in evaluating new teaching methods, although only 18.1 % accept them completely and unconditionally, which is only 5 % less than the same grades of Russian students. Although, only 5.9 % teachers admitted that they like everything about online learning. In general, we have to acknowledge positive aspects – both Russian and foreign students noted those points that assess if the online education helps them to make their life and study easier, and teachers – those that refer to the possibility of improving the quality of teaching.

We believe that the given data allows us to come to following **conclusion**: it is necessary to bring together the positions of teachers and students in relation to online learning, while displaying its disadvantages to students, and its advantages to teachers. Obviously, the differences in the assessments of Russian and foreign students will remain, because the attachment to home, which was mentioned above, plays a large role. Russian students have their own home “within walking distance” from the place of study, while foreign students miss it. The percentages as such are not important here, but general attitudes towards obtaining a quality education, have a common vector for both Russian and foreign students.

Russian students, similar to their teachers, most of all do not like the lack of psycho-emotional contact in online education, "live" communication – with classmates (17.8 %), with teachers (20 %), and teachers – with students. It is true, students feel discomfort from this three times less often than teachers. But foreign students are more concerned about the ineffectiveness of laboratory (37.5 %) and clinical (46.9 %) lessons in a distance format. Although the lack of live communication with fellow students (37.2 %) and teachers (39.1 %) is also felt quite significantly. In addition, it should be noted that foreign students are more active when choosing answers to the question about the negative aspects of online learning.

### Conclusion

Comparing these data, we can conclude that studying in a foreign medical university is assessed by students higher than education in their own country, they value the acquired knowledge more and choose those forms of training that are most advantageous for their professional development.

### Recommendations

1. It is advisable to select candidates for higher medical education in another country taking into account their level of digital technology skills.
2. Logistics of the educational process should include online components as secondary ones. It is useful to use them when entering the educational environment of a university, but not when studying specialised disciplines.
3. The effectiveness of training improves when students of the host country and foreign students work together (cross-communication), especially in those areas where there are evaluative differences in relation to the forms of education used.
4. Special training for teachers is required for a successful implementation of mixed forms of education, a special methodology and, possibly, modification of educational content.
5. It is advisable to make regular methodological video conferences between teachers of the receiving and sending

countries for the exchange of experience in educational challenges of foreign students in medical universities.

### Additional info

**Author contribution.** All authors made a substantial contribution to the conception of the work, acquisition, analysis, interpretation of data for the work, drafting and revising the work, final approval of the version to be published and agree to be accountable for all aspects of the work.

**Funding source.** This study was not supported by any external sources of funding.

**Competing interests.** The authors declare that they have no competing interests.

### Дополнительная информация

**Вклад авторов.** Все авторы подтверждают соответствие своего авторства международным критериям ICMJE (все авторы внесли существенный вклад в разработку концепции, проведение исследования и подготовку статьи, прочли и одобрили финальную версию перед публикацией).

**Источник финансирования.** Авторы заявляют об отсутствии внешнего финансирования при проведении исследования.

**Конфликт интересов.** Авторы декларируют отсутствие явных и потенциальных конфликтов интересов, связанных с публикацией настоящей статьи.

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