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Review

FACTORS AND STRATEGIES FOR REDUCING HEALTH RISKS FOR FOREIGN STUDENTS ATTENDING RUSSIAN UNIVERSITIES

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At present, investigating influence exerted by factors of the intra-university environment on foreign students' health is a relevant research trend. The aim of this study was to summarize and analyze literary data devoted to investigating health risk factors for foreign students associated with studying at Russian universities, analyzing adaptation strategies aimed at improving physical and mental well-being of foreign citizens and increasing effectiveness of their education.

The study was designed as a descriptive review, which implied qualitative description of scientific literature selected per established keywords. Overall, we analyzed 325 articles; of them, 62 were covered by the present review.

The article outlines certain challenges that foreign students may face during their studies at a higher educational institution. Modern higher education is characterized by academic mobility. The number of foreign students in higher education institutions ranges between 10 and 40 %. Foreign students who come from countries with different geoclimatic and cultural traditions have to go through a long adaptation period.

The intra-university environment was revealed to include a complex of multifaceted factors, namely, educational space, social sphere, physical, technological, financial and psychological aspects. Each factor contributed not only to academic success of foreign students, but also to their personal development and integration into the society.

Success of the educational process for foreign citizens was established to depend on education conditions, time and quality of their adaptation period as well as professional competence of teaching staff.

In addition, health of international students was proven to be an important aspect that included physical, psychological and social well-being. Being influenced by the intra-university environment, students may be susceptible to diseases of the nervous and musculoskeletal systems, respiratory organs, eyes and their adnexa, gastrointestinal tract, as well as parasitic diseases.

Based on the analyzed Russian and foreign works, we can conclude that the intra-university environment is a health risk factor for foreign students

Keywords: foreign students, risk factors, health, adaptation, intra-university environment, higher education, student mobility.

At present, the ongoing globalization that involves "...flows of technologies, economy, knowledge, people, values and ideas..." promotes, among other things, academic mobility of scientists, teachers, and students¹ [1]. This phenomenon when higher education becomes truly international attracts more and more researchers' attention

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¹ Quality and Internationalisation in Higher Education: Report. In: H. De Wit, J. Knight eds. *OECD*, 1999, 272 p. DOI: 10.1787/9789264173361-en

in its theoretical and practical aspects [2]. Its occurrence has stimulated academic interest involving relevant growth in the body of research [3] using various theories and methods (Push Pull Model, Human Capital Theory, Signaling Theory etc.) on the matter in various contexts (countries) [4]. Over the last decades, several waves of student mobility have been observed; among other things, they are thought to be associated with several global crises [5].

In accordance with the valid Order² signed by the President of the Russian Federation (RF), one of the tasks to be solved is to “*increase by not less than twofold the number of foreign citizens who study at higher education institutions ...*” together with “*... implementing relevant measures aimed at providing employment for the best of them in the Russian Federation*”. To achieve this, the Export of Education Federal Project³ was developed and implemented; it fixed the target increase in the number of such students up to 425 thousand by 2024. The latest valid document⁴, which sets national goals of the development of the Russian Federation, stipulates “*an increase in the number of foreign students by 2030, ... up to not less than 500 thousand people*”. The first goal as an image-related one is to make Russian education more attractive at the international level. Apart from that, these tasks allow resolving some economic

issues as regards growing non-commodity exports as well as integrating the most successful graduates in the Russian economy. In this respect, Russian HEIs are actively involved in education of foreign students, who will play a significant role in creating intellectual and innovative potential of both their own countries and the Russian Federation.

According to the data provided by the Ministry of Science and Higher Education of the Russian Federation, the number of foreign students in Russian HEIs has been growing steadily and amounted to 429.4 thousand people⁵ as of January 2025, which is 33.7 % higher against 2018 (321.3 thousand people). This fact may indicate that Russian education is becoming more popular on the international education market. Accordingly, the Russian educational system should be ready for this predicted growth in the number of foreign students considering peculiarities of their adaptation to new conditions.

Apart from the necessity to adapt to health-affecting factors that are common for all HEI students, foreigners have to adapt to new sociocultural and climatic conditions, educational systems and traditions. This requires more reserves and capabilities from their bodies as opposed to ‘native’ students.

Moving to another country involves the necessity to overcome the language barrier, to adapt to a new unfamiliar education sys-

² O natsional'nykh tselyakh i strategicheskikh zadachakh razvitiya Rossiiskoi Federatsii na period do 2024 goda: Ukaz Prezidenta RF ot 7 maya 2018 g. № 204 [On national goals and strategic tasks of the Russian Federation development for the period up to 2024: the RF President Order dated May 07, 2018 No. 204]. *Prezident Rossii*. Available at: <http://www.kremlin.ru/acts/bank/43027> (April 30, 2025) (in Russian).

³ Pasport natsional'nogo proekta «Obrazovanie», utv. Prezidiumom Soveta pri Prezidente RF po strategicheskemu razvitiyu i natsional'nykh proektam; protokol ot 24.12.2018 № 16 [The profile of the Education National Project, approved by the Presidium of the RF President Council on strategic development and national projects; the meeting report dated December 24, 2018 No. 16] (in Russian).

⁴ O natsional'nykh tselyakh razvitiya Rossiiskoi Federatsii na period do 2030 goda i na perspektivu do 2036 goda: Ukaz Prezidenta Rossiiskoi Federatsii ot 7 maya 2024 g. № 309 [On national goals the Russian Federation development for the period up to 2030 and future prospect up to 2036: the RF President Order dated May 07, 2024 No. 309]. *Prezident Rossii*. Available at: <http://www.kremlin.ru/acts/bank/50542> (April 30, 2025) (in Russian).

⁵ Kolichestvo inostrannykh grazhdan, obuchayushchikhsya v organizatsiyakh, osushchestvlyayushchikh obrazovatel'nyuy deyatel'nost' po obrazovatel'nykh programmam vysshego obrazovaniya [The number of foreign students accepted in higher educational institutions]. *EMISS: state statistics*. Available at: <https://fedstat.ru/indicator/59950#> (March 02, 2025) (in Russian).

tem and changes in customary diets and lifestyles as well as a psychological stress caused by loss of close friends and family.

These factors can have a negative effect on foreign students' physical and mental health deteriorating their academic performance and quality of life [6].

The available publications with their focus on adaptation of foreign students mostly concentrate on social and psychological aspects such as overcoming a cultural shock, integration into a student society, and development of cross-cultural competence [7].

Still, not enough attention is paid to investigating effects produced by learning conditions in Russian higher educational institutions on foreign students' health and to developing effective adaptation strategies aimed at protecting and promoting their physical and mental wellbeing. Failure to adequately estimate effects produced by risk factors related to the intra-university environment on foreign students' health may lead to an increase in incidence, poor academic performance, and, ultimately, expulsion from a HEI and health issues.

Given that, it seems necessary to perform a systemic analysis of risk factors for foreign students' health associated with studying in Russian HEIs as well as to develop complex adaptation programs aimed at mitigating negative effects produced by such factors.

The aim of this review was to summarize and analyze Russian and foreign literary data devoted to investigating health risk factors for foreign students associated with studying in Russian universities, as well as analyzing adaptation methods (strategies) aimed at improving physical and mental wellbeing of foreign students and increasing effectiveness of their education.

The following tasks were set:

- to identify and classify basic health risks for foreign students associated with studying in Russian HEIs (academic, sociocultural, economic, and medical);

- to estimate effects of these factors on foreign students' physical and mental health;

- to analyze the existing approaches and adaptation strategies adopted by foreign students in Russian HEIs.

Materials and methods. This review is a narrative (descriptive) analysis of research literature with its focus on investigating effects produced by education conditions in Russian universities on foreign students' health.

Information sources were represented by research articles published in Russian and English in leading databases such as PubMed, Scopus, Web of Science, eLIBRARY.ru, as well as proceedings of conferences, monographs and reports available in open access. Search for literature sources relied on using key words that reflected the research subject such as 'foreign students', 'adaptation', 'risk factors', 'health', 'higher education institution', and their synonyms, including those in English. The search was not limited to a certain time period so that we would be able to cover the maximum wide range of research articles on the issue. Overall, we selected 325 articles from literature sources relying on the selected key words. This review covers 64 of them based on their availability and completeness of the reported results.

Since we selected a descriptive type for this review, we did not use strict inclusion / exclusion criteria for the analyzed sources. Materials were selected per their relevance to the research subject and quality of the data they provided. The priority was given to studies, which describe experience gained by Russian universities, as well as articles reporting the results of empirical research and systemic reviews. We did not conduct quantitative analysis of the research results reported in the analyzed sources; primarily, attention was paid to qualitative analysis and systematization of information about health risk factors for foreign students and their adaptation strategies.

Our analysis involved systematizing information about risk factors classified per several categories (academic, sociocultural, economic, and medical) as well as estimating effectiveness of various adaptation strategies for foreign students described in the analyzed literature sources.

Results and discussion. *Health risk factors for foreign students in Russian higher education institutions.* Intra-university environment factors have multi-aspect influence on foreign students, among other things, causing risks for their physical and mental health during the whole study period. These factors can be tentatively divided into the following categories: academic (related to the educational process), sociocultural, economic, and medical-ecological ones.

Academic factors. The Russian higher education is often described as highly intensive involving a substantial volume of academic hours (more than 1200 lecture hours per year) and self-studies (33 % of the total academic hours). This may result in fatigue, stress, poorer work ability, chronic lack of sleep, and, consequently, weakened immunity and greater susceptibility to communicable diseases. Thus, studies accomplished in the N.F. Katanov's Khakassia State University reported signs of transitory immune deficiency in 43 % of the examined students. First- and second-year students in northern HEIs were found to have immunoglobulin A deficiency and more active reactions of lymph proliferation; strain of cellular-mediated protection mechanisms grew in senior students [8, 9].

Mastery of Russian language is a major obstacle for foreign students when they attend Russian HEIs. It creates difficulties in comprehending lectures, accomplishing study tasks, and passing exams; foreign students start to feel self-doubt and anxiety, their self-esteem goes down and academic performance becomes poor [10–13].

When studying at university, foreign students can face an educational system that is unfamiliar to them and rather different from one in their home country, including the structure of the educational process, control forms, and assessment methods. This requires adaptation of higher nervous activity to these new demands thereby increasing stress-inducing effects on the body [14, 15].

Absent or insufficient support provided by teachers can aggravate adaptation difficulties and this affects academic performance and motivation to continue studies [16–18].

Differences in educational programs adopted in primary and secondary school in different countries can result in inconsistency between the initial knowledge of foreign students and requirements made to this knowledge in Russian universities. This requires some additional efforts from them to eliminate gaps in their knowledge and can also induce some stress states [19].

Sociocultural factors. Studies to get a specialist, bachelor, or a master degree take quite a long time (from two to six years) and are directly connected with a place where students live as well as social and cultural environment around them, which can be health-protecting factors in some situations and health risk factors in others.

Moving to another country, getting acquainted with a new culture, traditions, habits, behavioral patterns, and values can lead to a 'cultural shock' when a person feels disoriented, anxious, disappointed and irritated [20]. Difficulties of cross-cultural communication associated with the language barrier and differences in communication styles can result in failure to understand each other, conflicts, and feeling alienated [21–23].

Being cut off from one's family, friends, and a customary social environment, difficulties in making social contacts in a new country can make foreign students feel lonely, socially isolated, and depressed [24–26].

In addition, foreign students can face discrimination, biased attitudes, racism and xenophobia, which affects their self-esteem, mental state and social integration [27–29].

Absence of a developed social support system for foreign students (for example, some mentor programs or mutual aid groups) can aggravate adaptation challenges and decrease feeling of safety and comfort [30, 31].

Economic factors. High costs of education and accommodation, low scholarships, and difficulties in finding a job can result in financial problems, limited access to healthcare services, low quality diets and poor living conditions [32, 33].

Living in dormitories with very small comfort, long distances between housing and a university, high rental costs (between 15 and 40 thousand rubles) can have negative effects on foreign students' physical and mental health [34].

Poor knowledge about local cuisine / limited choice of foods, high food prices (in 2025, the minimum expenditure basket costs 7326 rubles) can lead to imbalanced diets, deficiency of macro- and microelements and, as a result, health deterioration [35, 36].

Medical and ecological factors. Most part of Russia has very pronounced climatic seasonality with clear division into cold and warm periods with respective changes in insolation, temperature and humidity. Depending on a Russian region, air temperatures and humidity can vary between -50 °C in cold season to 35 °C and higher in warm one. These circumstances are associated with multiple other factors: insufficient illumination and insolation that promote vitamin D deficiency, especially in foreign students who come from countries with warm climate

(prevalence of vitamin D deficiency is 60–90 %); poor availability of fresh vegetables and fruits (grown on open ground) in some seasons; endemic diseases (tick-borne virus encephalitis, hemorrhagic fevers, etc. with frequency equal to 5–10 cases per 1000 foreign students, especially in spring and summer). Each such factor can be a potential health risk factor. Therefore, moving to another climatic zone involves forced acclimatization, adaptation to a new day regime, diets, and other living conditions, which can influence physical and mental health of foreign students [37].

For foreign students, moving to another country involves not only changes in weather and climate but also other customary environmental factors (quality of ambient air, drinking water, and soils, noise levels) especially in urbanized areas where universities are located the most often and where sanitary-epidemiological problems are much more likely to occur⁶.

Living in dormitories with high population density (2–6 people per room; depending on a dormitory type, 80–90 % of the places in them are filled during an academic year), contacts with many people, failure to stick to sanitary and personal hygiene rules or absence of any knowledge about them can create elevated risks of communicable diseases, especially during early adaptation periods [38, 39].

Difficulties in getting medical insurance, the language barrier in communication with doctors, and absence of knowledge about the healthcare system in Russia can make it difficult for foreign students to get medical assistance on time creating a delay in diagnosing and treating a disease⁷.

⁶ O sostoyanii sanitarno-epidemiologicheskogo blagopoluchiya naseleniya v Rossiiskoi Federatsii v 2023 godu: Gosudarstvennyi doklad [On sanitary-epidemiological well-being of the population in the Russian Federation in 2023: the State Report]. Moscow, Federal Service for Surveillance over Consumer Rights Protection and Human Wellbeing, 2024, 364 p. (in Russian).

⁷ Miller D.F., Harwell D.J. International students at an American university: health problems and status. *J. Sch. Health*, 1983, vol. 53, no. 1, pp. 45–49. DOI: 10.1111/j.1746-1561.1983.tb04053.x

Ultimately, stress, anxiety, and depression caused by adaptation to new conditions are health risk factors in themselves and can stimulate development of psychosomatic disorders (headaches, stomachaches, sleep disorders, etc.) [40–42].

Effects produced by factors of the intra-university environment on foreign students' health. Exposure to all the foregoing health risk factors can lead to elevated morbidity among foreign students if relevant adaptation measures have not been implemented. This morbidity can be manifested through various diseases.

Diseases of the nervous system. During the first study year, students tend to experience chronic stress upon exposure to some intra-university environment conditions identified as risk factors. This stress induces changes in some morphofunctional indicators of the body such as body mass index, vital capacity, blood pressure, and heart rate. It can be caused by such education-related factors as high educational loads, poor academic performance, inability to systematize newly acquired knowledge, sleeplessness, low interest in a chosen specialty, poor living conditions, and conflicts with peers and teachers. V.V. Ruzhenkova mentions in her article that frequency of neurotic states and stress-related somatoform disorders reaches 15 % among students. In addition, some researchers report that students with low resistance to stress are susceptible to anxiety and depression (10–15 %), are more irritable and emotionally unstable [43–46].

Diseases of the musculoskeletal system and connective tissue. Modern lifestyles adopted by students including foreign ones determine high morbidity of diseases of the musculoskeletal system (bad posture, scoliosis, etc.) caused by high educational loads combined with low physical activity. Many studies report that frequency of diseases of joints and musculoskeletal system can reach approximately 10–20 % among foreign students. High stress levels related to studying

and cultural adaptation stimulate muscle tension; gradual change in foreign students' eating habits is accompanied with lower blood calcium and vitamin D, which accordingly affects bone and joint health [47].

Diseases of the respiratory system. Studies at university involve frequent contacts with other people in the educational environment; consequently, this involves higher risks of airborne and droplet infections. Frequency of such diseases is also determined by the fact that foreign students' immunity often does not correspond to an epidemiological situation in a new place of living as regards presence of specific antibodies and is not ready for new communicable diseases and species diversity of microorganisms. Given that, frequency of such diseases reaches 30–40 % among foreign students [48].

Diseases of the eye and adnexa. Diseases of the eye and adnexa (myopia, 15–25 %; allergic conjunctivitis, 10–15 %; dry eye syndrome, 20–30 %) hold the leading place per morbidity levels among students including foreign ones. Students fail to keep a good posture during classes or study in lecture rooms with insufficient illumination, which, in its turn, affects their eyes. More frequent use of digital technologies and mobile devices can promote development of such pathologies as accommodation disorders, weaker eyesight, myopia included, computer vision syndrome, and dry eye syndrome [49].

Diseases of the digestive system, endocrine, nutritional and metabolic diseases. Issues related to having a healthy and balanced diet are a significant aspect of foreign students' health. N.A. Agadzhanian points out that “according to the recommendations by the UN Committee on Nutrition and Calorie Needs, each 10 °C decline in mean monthly temperature requires a 5 % rise in caloric contents if +10 °C is taken as the initial level” [35]. Based on that, discrepancy between initial diets of foreign students and

diets they usually have in Russia can be a risk factor that causes or aggravates already existing diseases of the digestive system, frequency of which reaches 20–40 % among foreign students [50, 51].

Some infectious and parasitic diseases. Infectious and parasitic diseases are another significant disease category among foreign students. Some studies use people who often travel for a long time as an example to show that the gut microbiota composition can change due to changing a place of living and this can lead to dysbiotic and immune-deficient states [52] creating additional adaptation costs for foreign students. Major risk factors of infectious and parasitic diseases include absence or poor awareness about infectious agents and pathways of infection transfer as well as failure to follow personal hygiene rules, partially or completely. Combined with unfavorable sociocultural and economic factors, these conditions can decrease the overall sanitation level thereby increasing likelihood of getting infected and spreading communicable diseases and parasitic invasions among this student group (5–15 % of foreign students from warm countries have infections or parasites) [53]. On the other hand, living in Russia can decrease likelihood of some vaccine-managed infections (measles, rubella, poliomyelitis, etc.) and sanitation-caused parasitic diseases (helminthiasis) for foreign students relative to countries they come from.

Approaches to foreign students' adaptation. Health risk factors and states / diseases they are able to cause are numerous and diverse. Bearing this in mind, we should remember that effectiveness of adaptation activities provided for foreign students depends on a complex approach including language training and support, sociocultural adaptation, psychological support, medical support, financial support, and providing better housing.

Language training and support. Organizing and developing intensive Russian lan-

guage courses is an important stage in training provided for foreign students prior to the study period as well as during it. This approach creates a solid language base and self-confidence for successful learning. In addition, providing learning materials in several languages promotes better perception and understanding of the Russian language. Any complications that arise within the educational process can be easily overcome by having access to resources in different languages. Special attention is paid to language support, providing students with interpreters' and tutors' services, which creates comfortable learning conditions and helps master new knowledge more effectively. Access to such specialists allows explaining difficult subjects and minimizes language barriers. Language clubs and talk groups create additional opportunities for practicing the language among foreign students. In such informal situation, students can discuss various topics, share their experience and master their language skills, which, in its turn, promote their language development and confidence in communication using the Russian language [54].

Sociocultural adaptation. Organization of on-boarding courses in Russian history, culture and traditions plays a key role in foreign students' adaptation to new conditions. Such courses not only help them to get acquainted with Russia's rich heritage but provide a better insight into the Russian society. No doubt, this enriches the educational process, facilitates adaptation and potential integration of future experts into the society. Various cultural events, excursions and festivals are an important component in adaptation since they help foreign students to not only know Russian culture and the society better but also actively interact with locals. Creation of mentor programs aimed at supporting foreign students can facilitate adaptation considerably and help first-year students to enter the educational process and student life more successfully. Senior stu-

dents can act as such mentors / tutors by sharing their experience and knowledge. Meetings with representatives of various national diasporas are also an important aspect of students' adaptation, which creates opportunities for sharing cultural experience and helps students to feel themselves a part of a multi-national society. This undoubtedly promotes their personal development and social integration [55–57].

Psychological support. An opportunity to get psychological consultations and group therapy in a native language is another adaptation aspect aimed at providing necessary support for foreign students. An insight into cross-cultural differences and language barriers can have substantial influence on adaptation quality; therefore, it is necessary to create a safe space where students can openly discuss their feelings, fears and anxiety in their native language. This facilitates deeper and more sincere communication, which, in its turn, promotes positive adaptation. It is also very important to organize trainings in stress-management, adaptation to a new environment and cross-cultural communication. Such trainings aim to develop skills necessary for foreign students since they help tackle challenges associated with staying in a foreign country. Creation of psychological support services in universities logically continues adaptation. Access to qualified mental therapy should be open and available to all students [58, 59].

Medical support. Providing foreign students with available healthcare services includes many aspects facilitating their comfortable and safe staying in a new country. Special attention is paid to possibility to communicate with healthcare workers using a native language; this allows overcoming language barriers and facilitates better understanding between doctors and patients. In addition, periodical medical check-ups, vaccination and information campaigns about healthy lifestyles are a significant component

in health promotion and successful adaptation of foreign students [60].

Financial support. Scholarships and grants for foreign students reduce financial burdens and allow them concentrate their efforts on learning. Such programs can be aimed at attracting talented students and creating a diverse educational environment. Help in finding an additional income source can also be a considerable adaptation element. Another significant factor is consulting foreign students on financial planning and managing their budgets. This is especially important for people who have to face unclear / unfamiliar peculiarities of the financial system existing in a host country [5, 61].

Providing better housing. Foreign students' adaptation involves providing them with comfortable living conditions, which play a key role in their integration into the educational process. It can resolve several related issues. Providing students with places in dormitories includes creation of comfortable and safe conditions, which facilitate their socialization. Dormitories should consider cultural specificity of foreign students and be equipped with all necessities including communal areas for rest and studies so that students can easily communicate with each other and share their experience [62, 63].

Analysis of available research literature has revealed that studying at Russian universities can create elevated health risks for foreign students. A complex approach is advisable for effective adaptation and diseases prevention. It should consider academic, sociocultural, economic and medical and ecological health risks for foreign students. Effectiveness of adaptation programs directly depends on creating favorable learning and living conditions as well as providing available and qualitative healthcare services.

Our findings expand the overview of possible risk factors and adaptation issues for foreign students and this allows developing more effective strategies for resolving

them. They can be used for developing new adaptation programs for foreign students in Russian HEIs or updating the existing ones as well as for developing methodical guidelines for teachers, experts of international departments and other specialists working with foreign students.

Study limitations and prospects. Despite our effort to conduct a comprehensive analysis, this literature review has certain limitations caused by the selected study design:

1. Data selection and interpretation are subjective. In contrast to systemic reviews and meta-analyses, a narrative (descriptive) review involves greater subjectivity in data selection and interpretation;

2. Absence of quantitative assessments. All conclusions in this review are based on qualitative analysis and generalization of available data and not on their statistical analysis;

3. Limited number of analyzed literature sources. Despite rather wide search, the review does not claim full coverage of all existing literature in the subject matter. Some research works might have been missed and not included in the analysis due to limited access to databases or the authors' language barrier.

These limitations taken into account, the conclusions made in this review should be considered structured generalization of existing knowledge on health and adaptation issues of foreign students in Russian HEIs and as a basis for further research. More wide-scale investigations are necessary including systemic reviews and meta-analyses for obtaining more precise and well-grounded quantitative data.

Conclusion. The results of this literature review have made it possible to analyze and systematize key health risk factors for foreign students attending Russian higher

education institutions. The intra-university environment has been found to have complex influence on physical and mental well-being of this student cohort caused by academic, sociocultural, economic and medical and environmental factors. High educational loads, language barriers, cultural shock, financial difficulties, and limited access to healthcare services are only some of health risk factors foreign students have to face when they adapt to new conditions. Our analysis of research literature has revealed that exposure to these factors can lead to elevated morbidity, poor academic performance and social deadadaptation, which, in its turn, has a negative effects on foreign students' quality of life and can prevent them from achieving their educational goals. We have systematized the most common and effective adaptation measures for foreign students, which can mitigate adverse effects of risk factors.

This review has practical significance for developing and updating adaptation programs for foreign students in Russian universities as well as for developing methodical guidelines for teachers, experts of international departments and other specialists working with foreign students. Our findings can be used for developing targeted activities aimed at mitigating negative effects produced by risk factors on foreign students' health and at making their learning more effective. It is necessary to develop and implement complex and effective adaptation programs aimed at creating favorable conditions for learning, living, and social integration of foreign students attending Russian higher education institutions.

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