

# The peculiarities of Adaptation of First-Year Students to the University during COVID-19 Pandemic in Russia

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## Abstract

The speed and efficiency of student adaptation largely determines the success of the educational process. This is especially true for university freshmen, as the older adolescent organism, with its specific neurophysiological characteristics, is very sensitive to changes in the environment. The situation with SARS-CoV-2 virus (COVID-19) pandemic has added to the problem of adaptation. The present study aims to examine the influence of the COVID-19 pandemic on the first-year students' adaptation to university studies in Russia. The study involves 692 freshmen with an average age of 18.7, majority of women (80.6%), from three Russian universities: Kazan National Research Technological University, Kazan Federal University and Kazan Aviation University. The results show that during the COVID-19 period statistically significant changes occurred in almost all the adaptation components: physiological adaptation ( $p < .0001$ ), socio-psychological adaptation ( $p < .05$ ), academic adaptation ( $p < .05$ ). There was a decrease in the level of physiological adaptation, while socio-psychological adaptation and academic adaptation increased. Comparison by gender during the COVID-19 period shows differences between adaptation processes of men and women. Comparison of foreign students with Russian citizens during the COVID-19 period demonstrates that foreign students stand out in socio-cultural adaptation (4.94 - foreigners, 4.64 - citizens of Russia,  $p < .05$ ), physiological adaptation (5.36 - foreigners, 4.36 - citizens of Russia,  $p < .00001$ ) and academic adaptation (5.28 - foreigners, 4.99 - citizens of Russia,  $p < .05$ ).

*Keywords: Adaptation; higher education; first-year students; SARS-CoV-2 virus (COVID-19) pandemic.*

## Resumen

*Las peculiaridades de la adaptación de los estudiantes de primer año a la universidad durante la pandemia COVID-19 en Rusia.* La velocidad y eficiencia de la adaptación de los estudiantes determina en gran medida el éxito del proceso educativo. Esto es especialmente cierto para los estudiantes de primer año de universidad, ya que el organismo de los adolescentes mayores, con sus características neurofisiológicas específicas, es muy sensible a los cambios en el entorno. A las habituales dificultades de adaptación se ha sumado la problemática generada por la pandemia del virus SARS-CoV-2 (COVID-19). El presente estudio tiene como objetivo examinar la influencia de la pandemia COVID-19 en la adaptación de los estudiantes de primer año a los estudios universitarios en Rusia. El estudio involucra a 692 estudiantes de primer año con una edad promedio de 18,7 años, la mayoría mujeres (80,6%), de tres universidades rusas: Universidad Tecnológica de Investigación Nacional de Kazán, Universidad Federal de Kazán y Universidad de Aviación de Kazán. Los resultados demuestran que durante el período COVID-19 ocurrieron cambios estadísticamente significativos en casi todos los componentes de la adaptación: adaptación fisiológica ( $p < .0001$ ), adaptación socio-psicológica ( $p < .05$ ), adaptación académica ( $p < .05$ ). La comparación por género durante el período COVID-19 muestra diferencias entre los procesos de adaptación de hombres y mujeres. La comparación de estudiantes extranjeros con ciudadanos rusos durante el período COVID-19 demuestra que los estudiantes extranjeros destacan en adaptación sociocultural (4.94 - extranjeros, 4.64 - ciudadanos de Rusia,  $p < .05$ ), adaptación fisiológica (5.36 - extranjeros, 4.36 - ciudadanos de Rusia,  $p < .00001$ ) y adaptación académica (5,28 - extranjeros, 4,99 - ciudadanos de Rusia,  $p < .05$ ).

*Palabras clave: Adaptación; educación superior; estudiantes de primer año; pandemia del virus SARS-CoV-2 (COVID-19).*

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The issue of adaptation to the environment is vital for the survival of any species, and the changing circumstances on the planet has made from us humans what we are now. At these moments, the world is getting adapted to the virulent SARS-CoV-2 virus (COVID-19). The issue of adaptation is therefore today more acute than ever. The COVID-19 pandemic has changed the global society significantly, with social interactions reduced to those strictly necessary, and has brought about other economic and social changes. Many countries have adopted lockdown to ensure security among the population and to prevent the spread of the virus (Aloi et al., 2020). COVID-19 has upended many areas of human activity and the higher education system is no exception. It has changed at all levels in a very short period of time. On May 15, 2020, 158 countries around the world had closed their educational institutions due to the rapid spread of COVID-19, affecting almost 70% of the world's student population (UNESCO, 2020).

According to the Ministry of Science and Higher Education of the Russian Federation, within a few weeks between March and April of 2020, 95% of Russian students switched to distance education and then to blended learning due to the lockdown. Later, the Ministry decided to extend distance learning until February 2021 (Yarmak et al., 2021). Today, university freshmen are exposed to a range of study formats, among them online learning, blended learning, distance learning and face-to-face learning. Still, adaptation to new conditions requires time. Around the world, many students resist to accept distance education as online learning has the stigma of being lower in quality than face-to-face learning (Hodges et al., 2020). Students from Moscow State University and other universities in Russia, after being transferred to the online format, asked for refund of their tuition fees, since in many universities distance learning is much cheaper than face-to-face education (Klyagin et al., 2020). According to students, the online education is currently being accepted due to the situation of need, but they believe that afterwards it will all return to normal. Although, for some young people, online teaching has become an opportunity to study in any place of the world without having to move from their home country or region, the majority of students do not want to continue their studies in this format because it makes it harder to assimilate information, especially when it comes to practical classes (Bogdan & Becur, 2020).

While students believe that the situation will return to what it was before the outbreak of the SARS-CoV-2 virus (COVID-19) pandemic, epidemiologists affirm that SARS-CoV-2 (COVID-19) virus will not go away and will be present in the human population for a long time. Therefore, students will have to learn to live with possible restrictions. As the majority of students have not yet accepted the changes introduced by the pandemic, they will need more time to finally accept this situation, according to the "grief" model of Kubler-Ross and Kessler (2005). Universities have to make more effort to help students in their adaptation to this difficult situation, in particular, developing self-organization competencies in students (Vasileva et al, 2021) and helping them to stay motivated.

This is especially relevant for 1st year students, as this is the age of shaping their social image, forging relationships, striving for independence, and developing ability to take decisions. This age is characterized by maximalism, a transition to the new living conditions, being still financially dependent on parents but living on their own. The age from 17 to 25 is important as the final period of personality development and the stage of professionalization (Ananiev, 1974). Neurophysiological characteristics of this age are associated with the development of the central nervous system. Young people of this age have the fastest reaction to external stimuli and increased emotional

sensitivity (irritability) to various circumstances of the surrounding life (Nebylitsyn, 1972). It is true that students' circumstances vary a lot: while some still stay with their parents, others share a flat with peers or live in a student's residence. Some even move to another country where they not only enter a different education system, but also acquire the new norms and behavior patterns. Entering higher education creates demands generally superior to their current skills. Studying at a university requires responsibility, autonomy, and well-formed learning skills. Students are expected to organize their time and distribute their workload adjusting it to the circumstances and time available.

The problems of adaptation to the learning process are often associated with students' lack of autonomy. They rely little on their own and, instead, ask their classmates and teachers for advice or search for answers on the Internet. The pandemic situation has changed the process of adaptation of freshmen creating additional difficulties. Students had to conduct their studies in a state of prolonged stress and post-stress period (Kupriyanov & Zhdanov, 2014). The full impact of this factor on student adaptation to higher education is yet to be known. During the pandemics, the majority of students faced the problem of extra time distribution and needed to adjust their routines to allow for suddenly elevated workload. Later, however, when they returned back to the university, they had to re-adjust their routines again and lack of time has become their great problem. Research is now starting to study the impact of lockdown on adolescent mental health (Fegert et al., 2020). As an example, the study developed with Spanish adolescents during the first weeks of lockdown showed that emotional and behavioral changes (difficulty concentrating, irritability, anxiety, conflict, etc.) were observed by parents in 88.9% of cases (Orgilés et al., 2020).

The objective of this research is to define the peculiarity of first-year students' adaptation to higher education during the outbreak of COVID-19 in Russia. Each country has offered different solutions to allow university students continue with their studies under pandemic-related restrictions. Therefore, it's logical to compare the adaptation processes before and during the pandemic in one and the same country, in this case, in Russia. The issues of Russian students' psychological adaptation during the pandemic were studied by Vasileva et al. (2021), while Tikhonova et al. (2021) compared adaptation of first-year Russian and foreign students. The hypothesis of our study was that the pandemic affected all the components of the adaptation process, differently for men and women, local and foreign students. In addition to testing each component, our hypothesis was to be therefore tested separately for each mentioned group to account for their peculiarities.

## Method

### Participants

In the 2020/21 academic year during the outbreak of the SARS-CoV-2 coronavirus (COVID-19) pandemic, we interviewed 445 first-year students, among them 392 Russian freshmen from Kazan National Research Technological University and Kazan Federal University and additionally 53 foreign freshmen from Kazan Aviation University (Russia). All students were from public universities and had the same socio-economic level. We compared this data, obtained during the pandemic period, with the equivalent data collected before the pandemic, in the study conducted in the academic year 2018/19, of 247 freshmen from the same universities and faculties. On the total, 692 subjects with an average age of 18.7, the majority of whom were women (80.6%), took part in the study.

## Instruments

It is possible to approach adaptation as a multi-component and complex process. Rean et al. (2006), in his theoretical analysis, suggested to distinguish between psycho-physical, behavioral, cognitive, and subjectively personal components in the adaptation process. In other sources, the process of adaptation is considered as behavior, due to the relationship between psycho-physiological and socio-psychological patterns (Morozov et al., 2017). In our research, focused on academic sphere in an intercultural context, we single out the following four components in students' adaptation to university life: physiological adaptation, academic adaptation, socio-cultural adaptation, and socio-psychological adaptation. At any given moment of the adaptation period these components have particular significance and weight in their effect on the process of adaptation (Nugmanova et al., 2021).

To study the adaptation process, we developed the questionnaire "Assessment of students' adaptation to the university" as part of our previous study. The test methodology and its psychometric properties appeared elsewhere (Kupriyanov & Nugmanova, 2019). The questionnaire has four scales assessing the four aspects of students' adaptation to university life: "physiological adaptation", "socio-cultural adaptation", "socio-psychological adaptation", and "academic adaptation". A scale to assess the level of language acquisition has been introduced for foreign students. The questionnaire contains 25 questions, answers to which are assessed according to 7-point Likert scale. The level of language acquisition consists of 4 questions. At the end of the questionnaire, we compute the average score on each adaptation scale. We shall now elaborate on these scales in more detail.

*Physiological adaptation* is a set of physiological characteristics which determine a human body compensation for the changes in the environment (water, food, climate, time zones). For students it includes the study-life balance, the local climate, the prevailing level of activity and correlation of functional systems, body organs and tissues, as well as body control mechanisms which ensure a student's normal body functioning during the academic year (Arseniyev, 2003). A person's adaptation to a new environment and the resulting emotional and psychological tension along with the climate change cause psycho-physiological difficulties. Therefore, the physiological adaptation in the context of this study covers the following factors: physical well-being from the very start of university studies, the study schedule, sleep, and nutrition during the time at a university, the level of comfort of the study premises as well as the health condition at the start of the university training. In (1) we can see an example of a question on physiological adaptation.

(1) Rate your overall state of health since the beginning of your university study.

*Academic adaptation* characterizes the maximum degree of the person's ability to adjust to education in a particular institution, including the ability to acquire knowledge, skills and competencies in the new educational environment; adoption of the university's testing system, self-education forms and skills, rationally organizing one's own study process (Bayeva et al., 2021). This aspect of adaptation helps to develop certain personality traits in first-year students: leadership, diligence, responsibility, discipline and attention. Within the framework of academic adaptation, we deal with the interest in courses taught at the university, the ability to display one's individual character, perceptiveness to the study material of a particular training program, good time-management of individual workload during university studies, the ability to read and understand scholarly and

academic literature, the ability to make presentations during classes, readiness to master one's professional aptitude. In (2) we can see an example of a question on academic adaptation.

(2) Rate how university study allows you to express abilities.

*Socio-cultural adaptation* has to do with how well the person fits into the new cultural environment (the feeling of harmony and well-being in a foreign cultural environment). Socio-cultural adaptation deals with a series of questions like: how well-informed the student is about social and cultural life of his university, if he/she takes part in social and cultural events in the city or town, whether the local everyday life has something interesting to offer him/her, whether he/she participates in certain free time activities (music, sport, dancing, socializing), if he/she takes steps to learn about the local history and culture in the city of the university's location (Gladush et al., 2008). In (3) we can see an example of a question on socio-cultural adaptation. One important part of socio-cultural adaptation for foreign students is linguistic acquisition, which is being analyzed apart.

(3) Rate how well-informed you are of the university's social and cultural life.

*Language acquisition* or linguistic adaptation for foreign students is an important condition for socialization and successful achievement of a university degree. The term "linguistic adaptation" appears in Russian academic sources (Yankovsky, 2004) and comes to be equivalent to what is understood in English-speaking academic world as "language acquisition" (Lenneberg & Lenneberg, 2014).

*Socio-psychological adaptation* consists of two related components. Social adaptation is comprehension, on the part of the student, of rules and values of the university's educational space. Psychological adaptation is a student's psychological preparedness to the university study, his/her ability to tackle the workload and stressful situations which arise during the study. The questions on the socio-psychological scale of the questionnaire have to do with the following subjects: emotional well-being from the start of the university training, interest in fellow students, level of emotional comfort among other students, a student's activity level in a group, help and support being received from peers, emotional atmosphere in a student group, number of social contacts with other students at the university (Osnitskiy, 2004). In (4) we can see an example of a question on socio-psychological adaptation.

(4) Rate how comfortable you feel in your student group.

## Procedure

The study was approved by the Ethics Committee of the Kazan National Research Technological University, Kazan Federal University (Russia) and was conducted in accordance with the Declaration of Helsinki. The questionnaire was published during the outbreak of COVID-19 online as Google form in February 2021. All students voluntarily agreed to fill out the questionnaire. They knew that their participation was completely anonymous. The study took place in two stages. The first study was conducted in the academic year 2018-2019, previous to COVID-19 situation, then we surveyed 247 people from two universities: Kazan National Research Technological University and Kazan Federal University. In the academic year 2020-2021, during the outbreak of COVID-19, we studied 445 people, including 392 Russian students from Kazan National Research Technological University, Kazan Federal University and 53 foreign students from Kazan Aviation University.

Figure 1. Average values of adaptation components before and during the COVID-19 pandemic

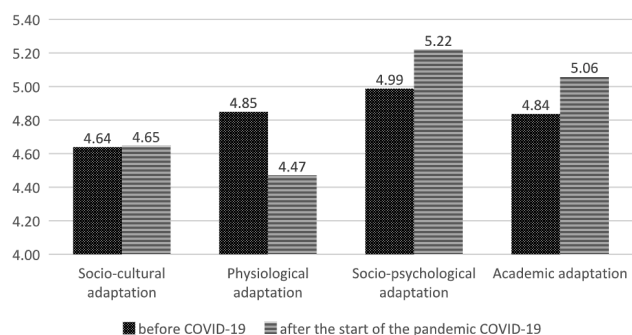


Figure 2. Distribution of values of adaptation components during the COVID-19 pandemic as compared to the situation of the same before the pandemic

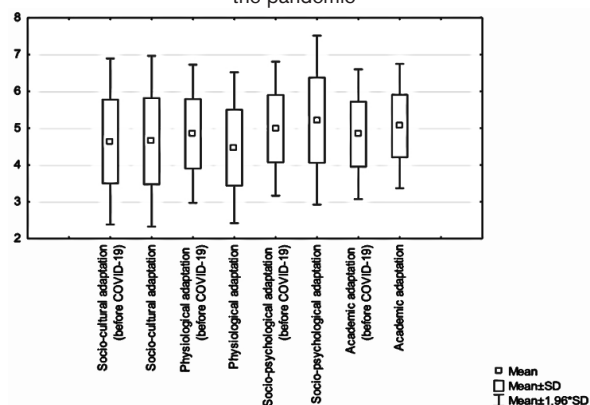


Table 1. Mean values of adaptation components before and during the COVID-19 pandemic (Mann-Whitney U method)

Adaptation	Mean before the COVID-19 pandemic, <i>n</i> = 247	<i>SD</i>	Mean during the COVID-19 pandemic, <i>n</i> = 392	<i>SD</i>	<i>p</i> -value, Mann-Whitney <i>U</i>
socio - cultural	4.64	1.15	4.64	1.15	.88
physiological	4.85	.96	4.36	1.06	≤ .001*
socio-psychological	4.99	.93	5.13	1.15	.02*
academic	4.84	.90	4.99	.90	.04*

Note. *SD* = Standard Deviation; \* - statistically significant differences *p* < .05

Table 2. Comparative analysis of adaptation of foreigners and Russian citizens (Mann-Whitney U method)

Adaptation	Mean Foreigners, <i>n</i> = 52	<i>SD</i>	Mean Russian citizens, <i>n</i> = 392	<i>SD</i>	<i>p</i> -value, Mann-Whitney <i>U</i>
socio-cultural	4.97	1.41	4.64	1.15	.03*
physiological	5.36	1.18	4.36	1.06	≤ .001*
socio-psychological	5.25	1.41	5.13	1.15	.18
academic	5.28	1.07	4.99	0.90	.04*
language acquisition	4.62	1.43	6.46	1.01	≤ .001*

Note. *SD* = Standard Deviation; \* - statistically significant differences *p* < .05

Table 3. Comparison by gender during the COVID-19 pandemic of the mean values of adaptation components (Mann-Whitney U method)

Adaptation	Mean male, <i>n</i> = 86	<i>SD</i>	Mean female, <i>n</i> = 358	<i>SD</i>	<i>p</i> -value, Mann-Whitney <i>U</i>
socio-cultural	4.89	1.33	4.63	1.15	.045*
physiological	5.00	1.13	4.35	1.08	≤ .001*
socio-psychological	5.28	1.10	5.11	1.20	.31
academic	5.11	.91	5.00	.93	.46
language acquisition	5.42	1.51	6.38	1.14	≤ .001*

Note. *SD* = Standard Deviation; \* - statistically significant differences *p* < .05

Table 4. Comparison of university adaptation of women before the COVID-19 pandemic and during the pandemic (Mann-Whitney U method)

Adaptation	Mean female before the pandemic, <i>n</i> = 124	<i>SD</i>	Mean female during the pandemic, <i>n</i> = 358	<i>SD</i>	<i>p</i> -value, Mann-Whitney <i>U</i>
socio-cultural	4.81	.98	4.63	1.15	.12
physiological	4.86	.83	4.35	1.08	≤ .001*
socio-psychological	5.10	.87	5.11	1.20	.94
academic	4.97	.86	5.00	.93	.75

Note. *SD* = Standard Deviation; \* - statistically significant differences *p* < .05

Table. 5 Comparison of university adaptation of men before the COVID-19 pandemic and during the pandemic (Mann-Whitney U method)

Adaptation	Mean male before the COVID-19 pandemic, n = 120	SD	Mean male during the pandemic, n = 86	SD	p-value, Mann-Whitney U
socio-cultural	4.47	1.16	4.89	1.33	.01*
physiological	4.85	.91	5.00	1.13	.43
socio-psychological	4.98	.93	5.28	1.10	.02*
academic	4.78	.88	5.11	.91	.02*

Note. SD = Standard Deviation; \* - statistically significant differences  $p < .05$

### Statistical analysis

The statistical analysis of the questionnaire answers was performed using STATISTICA software. A comparative analysis of the mean values of adaptation components before and during the COVID-19 pandemic was made using the Mann-Whitney U-method. Comparative analysis of adaptation of foreigners and Russian citizens, as well as gender comparisons, were also made with the Mann-Whitney U-method.

## Results

### The influence of the pandemic on the components of the adaptation process

The statistical analysis shows differences between the adaptation process of students before and after the outbreak of COVID-19. As can be seen from the Figure 1 and Table 1, there was a change in the average values of some adaptation components. Statistically significant changes occurred in the following components: physiological adaptation ( $p < .0001$ ), socio-psychological adaptation ( $p < .05$ ), academic adaptation ( $p < .05$ ). As can be seen from the diagram (Figure 1), there was a decrease in the level of physiological adaptation and, at the same time, the levels of socio-psychological adaptation and academic adaptation increased. The increase in these levels of adaptation can be explained by various reasons, in particular, it can be assumed that this is a compensatory response to a decrease in the level of physiological adaptation. To confirm this hypothesis, a longer study of adaptation processes is required. This can also be evidenced by a comparison of the general level of adaptation to studying at the university before (4.83) and during (4.78) the COVID-19 pandemic, which does not show statistically significant differences.

The distribution of values of adaptation components before the pandemic situation and during the pandemic (Figure 2) shows that the socio-psychological component of adaptation during the pandemic has a wider range of values than before the pandemic. Although, in general, the value of the socio-psychological component of adaptation increased during the pandemic, a larger spread shows that this process was unequal among students.

### Comparison of foreign students with Russian citizens during the pandemic

Comparison of foreign students with Russian citizens (Table 2) showed that, in general, foreigners assess their level of adaptation to the university (5.10) higher than local students (4.96), although the difference is not statistically significant. Comparison of adaptation components showed that there are statistically significant differences

in the values of adaptation. Foreign students have higher values in socio-cultural adaptation (4.94 - foreigners, 4.64 - Russian citizens,  $p < .05$ ), physiological adaptation (5.36 - foreigners, 4.36 - Russian citizens,  $p < .00001$ ), academic adaptation (5.28 - foreigners, 4.99 - Russian citizens,  $p < .05$ ). This difference can be explained by the fact that only a person with a high adaptive potential decides to go to study abroad. People who find it difficult to adapt to new conditions will prefer to continue their studies at home, therefore the group of foreign students has higher values for a number of adaptation components. There were no statistically significant differences in psychological adaptation between Russian citizens and foreign students, which may also indicate a good adaptability of foreign students, since they have a level of adaptation that is not lower than local students. As can be seen from the table, the greatest difference between foreign and local students' adaptation is their language acquisition level (4.62 - foreigners, 6.46 - Russian citizens,  $p < .00001$ ), which indicates the urgency of the problem. Foreign students rate their linguistic adaptation significantly lower than native speakers, so this can be the greatest difficulty in adapting to new learning conditions in another country.

### Impact of the pandemic on the adaptation components of male and female students

Comparison by gender shows differences between the adaptation process of males and females. As can be seen from the Table 3, for males, on average, the general level of adaptation (5.07) is higher than for females (4.77) (this is without assessing language acquisition), the statistically significant significance of these differences is  $p < .05$ . Comparison of individual components of adaptation to the university revealed that, on average, young men have higher values than young women, in terms of the level of physiological adaptation (for male - 5.00, for female - 4.35,  $p < .00001$ ) and socio-cultural adaptation (for male - 4.89, for female - 4.63,  $p < .05$ ). Young women, in contrast to young men, have higher levels of language acquisition (for male - 5.42, for female - 6.38,  $p < .00001$ ).

Analysis of the Table 4 and the Table 5 shows that the adaptation process has changed in both women and men during the pandemic. In women, this change was not statistically significant in socio-cultural, socio-psychological, and academic adaptation. Only the average level of physiological adaptation has changed, during the pandemic it decreased from 4.86 to 4.35. This change can be explained by the lockdown, which led to the limitation of the physical activity of the population, which, in general, had a negative impact on the level of physiological adaptation.

Comparing the level of adaptation in men before and during the pandemic, we see a picture that differs from women's response to the pandemic. As can be seen from Table 5, statistically significant changes have occurred in their socio-cultural, socio-psychological, and academic adaptation. The average values of these adaptation components

improved during the pandemic. Such changes can be explained from the standpoint of the theory of stress, when, at the beginning of the emergence of a stressful situation, the body's resources are mobilized to combat the adverse effects of the environment (alarm stage). At the same time, their average level of physiological adaptation did not change significantly.

## Discussion

The aim of this study was to examine how the COVID-19 situation affected the adaptation of first-year students to the university in Russia. The hypothesis was tested separately for men and women, as well as for Russian citizens and foreign students, to account for their peculiarities. Our hypothesis was proved, and in all the selected student samples we observe changes in the adaptation components. Statistically significant changes occurred in the following components: physiological adaptation, socio-psychological adaptation, academic adaptation. A decrease in the level of physiological adaptation is also reported in other countries of the world in studies carried out on the physiological and psychological impact of the COVID-19 situation (Brooks et al., 2020). According to the World Health Organization (WHO, 1948, 2020), health is a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity. To achieve this state of harmony under stressful circumstances, university freshmen find a balance between adaptation components to adjust to the current situation. Therefore, an increase in the levels of socio-psychological and academic adaptation can be explained as a compensatory response to a decrease in the level of physiological adaptation. This can also be evidenced by a comparison of the general level of adaptation to studying at the university before and during the COVID-19 pandemic. This shows the students' good adaptive ability during the outbreak of COVID-19. For university freshmen, despite the situation of a pandemic, the tasks of professionalization, academic activity and socialization continue being important. A wide range of values of socio-psychological adaptation during the pandemic indicates a difference in the adaptive capabilities of students. Such a difference of values of socio-psychological adaptation can be explained by the vulnerability of this age, which is partly confirmed by the studies according to which older adolescents are more likely to experience psychological problems (Hagquist, 2010). Restrictions in contacts and blended learning affect student well-being (Vasileva et al., 2021).

Comparison of foreign students with Russian citizens during the COVID-19 showed that foreign students have higher values in socio-cultural, physiological and academic adaptation. This can be explained by the fact that students who decide to study in another country do it consciously and already have high adaptive capabilities (Arkatova et al., 2015). Fletcher and Stren (1989) also highlight that the psychological structure of the personality of a foreign student is characterized by an internal locus of control and responsibility for circumstances of his/her own life. At the same time, the input condition for successful adaptation abroad is language acquisition (Kozlova, 2010), which was greatly affected by the COVID-19 situation due to students' isolation. This goes in line with Tikhonova et al. (2021) who argue for online language clubs to help foreign students.

Comparison by gender during the COVID-19 period shows differences between the adaptation process of males and females. Our results are consistent with previous research that shows girls are more vulnerable to psychological stress than boys starting from school age (De la Barrera et al., 2019). The results are also consistent with our interdisciplinary study of the physiological parameters of stress and

coping strategies in men and women (Zhdanov et al., 2020). Comparing the changes in each of the two groups (men and women), it can be observed that the adaptation response to stress factors (pandemic COVID-19) is more pronounced in men than in women. At the same time, men present hypercompensation for the unfavorable impact of the COVID-19 pandemic on their process of adaptation. This type of response can lead to a more rapid expenditure of adaptive resources and subsequent transition to the stage of depletion. Thus, it can be assumed that if the restrictions associated with the pandemic COVID-19 remain in effect for a long time, then the male part of first-year students will be at risk, despite good indicators at all levels of adaptation as compared to women.

The present study has strengths and limitations. The main strength is the sample size, while the main limitation is the unevenness of the sample by gender, with 80.6% of women. The survey technique can present some bias, as it is built on self-reflection and self-evaluation. Self-evaluation is subjective and depends on many factors, including the mental and physical condition of the respondent. While the large size of the sample normally compensates for such individual characteristics, the general socio-psychological state in society during the pandemic can influence the final results of this methodology. This study has clear practical implications: educational institutions can use this information to help students adapt to the challenging situation. The comprehensive nature of the research allows universities to detect problems related to the most vulnerable aspects of the adaptation process and build a system of measures aimed at resolving them. In addition to already mentioned support to students in organizing and planning their academic activities, universities should consider introducing extra motivating activities online facilitating social contact or physical activity (especially among female students), and monitor male students' adaptation to the university in the middle term.

## Conflict of Interest

The authors declare that they have no conflict of interest.

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