RESEARCH IN PROGRESS

The Spread of COVID-19 in Russia: Immediate Impact on Mental Health of University Students

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Abstract Amid the spread of COVID-19, a study of mental health in university students from different regions of Russia ($n = 3057$) was undertaken during the period from April 9 to April 20, 2020. The results were compared to studies conducted earlier within a large-scale research project examining student mental health. Mental health indicators were analyzed during three different periods: long before the onset of the pandemic (period 1); in the early days of the spread of COVID-19 in Russia, though prior to the implementation of containment measures (period 2); during tough measures to contain the first wave of the pandemic (period 3). The comparison of indicators showed no differences in the levels of psychological well-being ($F = 0.918$; $p = .4$), significantly lower levels of depression, anxiety and stress during the period 1 compared to the periods 2 and 3 ($p < .001$), and the highest levels of anxiety and stress during the period 2. We also established a higher increase in the levels of depression ($F = 6.883$; $p = .001$), anxiety ($F = 11.868$; $p < .001$) and stress ($F = 10.384$; $p < .001$) in young men compared to the changes in the same indicators in young women during the pandemic. However, both before and during the pandemic, these indicators showed better mental health in young men than in young women. Thus, when studying the impact of the pandemic on students' mental health, it is crucial to take into account the possible dynamics of their mental state within relatively short periods of time and to pay particular attention to gender differences.

Introduction

The COVID-19 pandemic has changed the normal routine of university students, encroaching on it at various levels. Although many countries have reshaped their higher education systems, this impact on the educational process depends on the scenario in each individual country. The spread of the virus in Russia started in the midst of the spring semester, interfering with both the habitual routine of the academic year and thesis defense.

The first cases of COVID-19 in Russia were registered at the end of January 2020. It was at the same time that the Ministry of Science and Higher Education adopted a number of recommendations to strengthen sanitary, anti-epidemic and preventive measures on educational premises, including student dormitories. The first measures to prevent the spread of COVID-19 were introduced in Russia in February and early March. These included restricting the entry of foreign citizens into the country. The order issued on March 14 instructed to provide for the possibility of individual vacations and study according to an individual curriculum, to organize the interaction of students and teachers exclusively in the virtual educational environment and to use various educational technologies including online and distance learning.

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On March 26, 2020, the Ministry published individual psychological advice in a pandemic. On March 30, a self-isolation regime and rather strict restrictions on movement were introduced, for example, in Moscow, under which residents were allowed to leave the house only for valid reasons (to work for essential workers, to a pharmacy and to buy food at the nearest store). Walking around was prohibited for everyone, except for the need to walk pets within a distance of 100 m from the place of residence (Moscow Mayor's Decree…, 2020).

Thus, starting in the second half of March, the online learning format has become a new reality for millions of students in Russian universities. They had to face both organizational difficulties on the part of the university administration and problems of self-organization in an unusual physical space outside the university classroom and in an unusual educational format. This change has affected over 700 organizations and four million students. According to the Federal State Statistics Service, in the 2018/2019 academic year, 741 organizations carried out educational activities for bachelor's and master's programs in Russia (Russia in numbers, 2019). More than 4 million Russians and almost 300 thousand foreign students study at Russian universities.

An analytical report prepared by experts at the initiative of the Ministry of Science and Higher Education highlighted several areas of fundamental changes in the life of university students during the spread of the pandemic and in the situation of e-learning implementation (Lessons from the "stress test" …, 2020).

The changes included the transition of the educational process into a distance format, the spread of social problems associated with the return of a significant number of students from other cities to their parents, the introduction of a self-isolation regime in dormitories, the loss of jobs and sources of income for students and an increase in wealth inequality, reflected in the availability of digital learning tools and the cessation of extracurricular activities and extracurricular interaction with teachers and other students. The experienced changes could not but affect the psychological state of students in difficult educational and sociopsychological circumstances, especially in the absence or insufficiency of distant psychological assistance programs at Russian universities.

Mental Health of Modern Youth and Students

Recent research conducted before the pandemic suggests that today's students in different countries and cultures are characterized by high levels of stress, including academic-related stress, under normal circumstances. (American College Health Association, 2019; Pascoe et al., 2020; Rickwood et al., 2017). Various social problems, financial difficulties and academic factors contribute to the fact that more and more university students around the world are currently being diagnosed with mental health problems (Gotlib et al., 2019; Larcombe et al., 2016; Othieno et al., 2014; Sirota et al., 2018). A systematic review of several recent studies shows that the higher stress levels in university students are associated with a poorer quality of life (Ribeiro et al., 2018) and act as a trigger to the development of depression and anxiety (Beiter et al., 2015; Dantzer, 2012). A wide increase of mental health disorders among students has been noted recently. According to various sources, the most common disorders, such as depression and anxiety, affect 30–35% of students, significantly exceeding the prevalence of depression and anxiety in the general population (Alsubaie et al., 2019; Ibrahim et al., 2013; Moylan et al., 2013; Ozen et al., 2010). Some data indicate that students' mental state is even worse, which might be due to different measures used in different studies. According to a national survey of university students in the UK, 80% of respondents reported experiencing stress, 55% reported anxiety and 49% reported depression (Brown, 2016). In turn, high levels of stress, depression and anxiety not only affect the health and well-being of students, but also academic achievement (Bernal-Morales et al., 2015; Kotter et al., 2017).

The Pandemic and Students' Mental Health

The spread of COVID-19, along with the measures taken to control the pandemic and the need to make lifestyle changes, have contributed to increased levels of stress and anxiety and negatively affected the mental health of people around the world (O'Connor et al., 2020; World Health Organization, 2020). Studies conducted in the recent months in the countries affected by the pandemic have noted the role of the unpredictability and uncertainty of the situation, the severity of the disease, as well as misinformation and social isolation in the deterioration of the mental and the emotional state and in the increase of fears and phobias related to health (Asmundson & Taylor, 2020; Lima et al., 2020; Zandifar & Badrfam, 2020).

In a pandemic, it is natural for the professionals to turn to the study of mental state in certain groups of people: medical staff who are most susceptible to the threat of infection and psychological problems (Chen et al., 2020a, b; Kang et al., 2020; Lai et al., 2020; Xiao et al., 2020), homeless populations (Tsai & Wilson, 2020), pregnant women (Rashidi Fakari & Simbar, 2020), elderly people and foreign migrants (Liem et al., 2020; Yang et al., 2020), patients with COVID-19 and their families (Duan & Zhu, 2020), or people with existing medical conditions or mental illnesses (Alonzi et al., 2020; Shigemura et al., 2020; Zhu et al., 2020).

Despite the fact that the health of young people is less affected by the pandemic, the specifics of the situation for students are characterized by a high degree of uncertainty associated not only with the current events, but also with prospects for the near future, which may significantly deviate from previous plans. Due to this special context, the call for research into the students' mental health during a pandemic is increasingly relevant (Grubic et al., 2020). At the moment, several studies have already been carried out on the mental health situation of students during the COVID-19 pandemic in different countries, which report negative changes in their mental state (Cao et al., 2020; Hyseni Duraku & Hoxha, 2020; Huckins et al., 2020; Marelli et al., 2020; Rasskazova et al., 2020; Rehman et al., 2020; YoungMinds, 2020; Zhai & Du, 2020). A study in India, for example, found that students, along with medical staff, were more likely to experience stress, anxiety, and depression during the pandemic (Rehman et al., 2020).

Restrictions on free movement, physical distancing, the closure of university campuses, limits on crossing borders between countries and regions, the constant restriction to a confined space shared with family members or neighbors and the inability to organize a space for learning, all contributed to the high uncertainty of the immediate future for students along with the effects associated with the unpredictable spread of the coronavirus (Killian, 2020; Quacquarelli Symonds, 2020). All over the world, in connection with measures aimed at containing the pandemic, higher educational institutions were forced to switch to the online learning format. The abrupt and unexpected transition to e-learning, which requires an extra effort of self-organization and increased motivation to overcome procrastination, is an additional stressor (Hyseni Duraku & Hoxha, 2020). The uncertainty of the educational situation, increasing the already existing academic stress, is complicated by the fact that turning to habitual coping strategies (for example, doing sports or participating in extracurricular activities) is difficult. In addition, the habitual sources of social support, such as family, may also experience increased stress. Therefore, "the COVID-19 pandemic has placed an unprecedented mental health burden on students, which urgently requires further examination and immediate intervention" (Grubic et al., 2020, p. 517).

Methods

Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)

Students' mental well-being was measured with the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) (Tennant et al., 2007). The scale contains 14 items and has been validated for use in a wide variety of different languages and cultural contexts and in many different settings including workplace, schools and health services. The WEMWBS covers subjective well-being and psychological functioning. Each item is worded positively and addresses an aspect of positive mental health. The scale was adapted for Russian respondents and verified for samples of different socioeconomic backgrounds.

Depression Anxiety Stress Scales (DASS-21)

The negative emotional states such as depression, anxiety, and stress were measured with the Depression Anxiety Stress Scales (DASS-21) (Lovibond & Lovibond, 1995). The subjects were asked to use a 4-point severity/frequency scale to rate the extent to which they had experienced each state over the past week. The scores for depression, anxiety, and stress were calculated by summing the scores for the relevant items. The brief form that was used included 21 items with 7 items per scale.

Both scales had been previously validated for use in a wide variety of cultural contexts, including Russia.

Data were analyzed with SPSS Version 19.0 for Windows. An analysis of descriptive statistics was conducted to illustrate the demographic characteristics of the participants. The datasets obtained after scoring the instrument were analyzed by means of multiple regression analysis and correlation matrices. Tests were carried out at the 0.05 significance level.

One-way analysis of variance (ANOVA) was used to examine the differences between psychological well-being and mental health indicators (depression, stress, anxiety) during the three different time periods. Data normality test was performed using the Kolmogorov–Smirnov criterion, and showed that for all three periods, for the results DASS21 and WEMWBS, both for the entire sample and for men and women, the distribution is normal ($p < 0.05$), which allowed us to use parametric statistics. The general linear model (Univariate) was used to evaluate the impact of gender and time period on levels of psychological well-being, depression, anxiety, and stress.

Participants

A study of the psychological well-being and the emotional state of university students amid the spread of COVID-19 was undertaken as part of a large-scale project launched by the Faculty of Psychology at Lomonosov Moscow State University and the Russian Psychological Society during the period from April 9 to April 20, 2020. Students of several universities from all eight Federal districts of Russia took part in the online study. Of all participants

(n = 3057), most were women (n = 2560), and the mean age was 21.23 years (SD = 4.470). The results were compared to those of the studies we conducted in 2018–2019 (n = 598) and during the period from 5 to 23 March 2020 (n = 206) within the research project on students' mental health (Table 1). The homogeneity of variance in the levels of psychological well-being, depression, anxiety, and stress across samples allows to compare the results despite the discrepancies in the sample size.

Thus, the results obtained during three different time intervals were compared. Period 1 dates back to 2018–2019, long before the first information about the coronavirus COVID-19 appeared. Period 2 starts at the beginning of March 2020 when the first case of COVID-19 was officially confirmed in Moscow, a few days before the announcement of a pandemic by WHO and the adoption of restrictive measures in Russia. During this period, the level of anxiety about the possible scenario began to increase in the Russian population, due to the epidemiological situation in other countries and the uncertainty of the situation. Period 3, when the current study was conducted, covered the span of restrictive measures in Russia caused by the increase in the number of infected subjects. The students interviewed during this period had already started online learning. According to Rospotrebnadzor (Federal Service for Surveillance on Consumer Rights Protection and Human Well-being), on the first day of the study (April 9, 2020), 8672 cases of coronavirus were recorded in Russia. Over the period that has elapsed since the beginning of the epidemic, 63 COVID-19 deaths were recorded and there were 580 recovered patients across the country.

The study of mental health of various categories of the Russian population, which was attended by university students from all eight Federal districts of Russia, was conducted in November 2018 and in April 2019. The data in Period 1 were collected by applying two different forms of filling in techniques-partly online and partly face-to-face. In November 2018, two samples balanced by volume, age, gender, and place of residence compared the results of both forms. The comparison revealed no significant differences, which, in addition to the successful verification of data consistency, allowed the further use of one of the two forms of data collection.

Data in Period 2 and Period 3 were collected online using Testograph, an online survey platform. Participants were recruited via social networks (Facebook, VKontakte), personal e-mail newsletters, as well as through the dissemination of information about the study in Russian universities.

Answers to questions related to COVID-19 provide additional information about the study participants (Table 2).

Results

Table 3 shows the characteristics of the subsamples at the different periods of the study.

Table 4 shows the mean and standard deviations of psychological well-being and mental health indicators (depression, anxiety, and stress) at various times during the study.

One-way analysis of variance (ANOVA) was used to analyze the differences in psychological well-being and mental health indicators (depression, stress, anxiety) during the three different periods in the whole sample and for men and women separately (see Table 5).

Comparison on the level of the psychological well-being showed no significant differences between the three considered periods, neither in the sample as a whole nor in women and men separately. The comparison of mental health indicators (depression, anxiety and stress) revealed significant differences in the periods under consideration, both in the sample as a whole and separately for women and men. A Tukey HDS test showed the particular periods between which significant differences in the levels of

Table 1 Place of residence of participants

Federal District of Russia	Period 1* Percentage (%)	Period 2**	Period 3***
Central and Northwestern Federal Districts	9.3	26.2	9.9
Southern and North Caucasian Federal Districts	48.8	0.0	26.5
Volga Federal District	22.0	38.7	40.7
Far Eastern, Ural and Siberian Federal Districts	19.9	35.1	22.9

* 2018–2019
** From 5 to 23 March, 2020
*** From 9 to 20 April, 2020

Table 2 Participants' answers to the questions on their attitude to the COVID-19 pandemic (as measured in April, 2020)

Variables	Frequency	Percentage (%)
Your attitude toward self-isolation		
Abide	2909	95.2
Do not abide	148	4.8
The occurrence of your social contacts		
Decreased	2201	72.0
Did not change	583	19.1
Increased	273	8.9
Your perception of the COVID-19 pandemic as a source of the problems and inconveniences, associated with work, studies, activity restrictions, social isolation, etc.		
Influenced greatly	1346	44.0
Influenced considerably	943	30.8
Somewhat influenced	497	16.3
Hardly influenced	113	3.7
Did not influence	158	5.2
Have you contracted COVID-19		
No	2662	87.1
Do not know	383	12.5
Yes	12	0.4
Have your relatives, close people, friends or colleagues contracted COVID-19		
No	2588	84.7
Do not know	395	12.9
Yes	74	2.4
Do you evaluate COVID-19 as a dangerous trigger for severe illness and threat to life?		
Extremely dangerous	644	21.1
Dangerous	1687	55.2
Average	354	11.6
Almost not dangerous	372	12.2
Not dangerous	644	21.1
Do most people around you try to protect themselves and others from the virus contraction (complying with sanitary norms, medical recommendations and the rules, imposed by the authorities)?		
No	1834	60.0
Do not know	1005	32.9
Yes	218	7.1
When do you think COVID-19 pandemic will be over?		
In 1 month	1034	33.8
In 3 months	1390	45.5
In 6 months	502	16.4
In a year or more	131	4.3

depression, anxiety and stress were obtained. The results are presented in Table 6.

A significantly better mental state was observed in the indicators of all three aspects of student mental health before the pandemic than in the two subsequent periods: immediately before the pandemic was declared and during the ongoing deterioration in the epidemiological situation.

Interestingly, the level of anxiety and stress is significantly higher in the second period, that is, before the pandemic was declared, than in the third period and when the situation continued to aggravate but the containment measures were already taken. At the same time, the differences in the level of student depression between the second and third periods are not significant.

Table 3 Sociodemographic characteristics of the subsamples

		Period 1	Period 2	Period 3	Padj
Sex	Male	168 (28%)	46 (22%)	497 (16%)	< .001
	Female	430 (72%)	160 (78%)	2560 (84%)	
Age	Mean	19.52	21.22	21.23	< .001
	Std. Deviation	2.894	4.300	4.470	

Table 4 Descriptive statistics of the study variables

	Period 1					Period 2					Period 3				
	Mean	Median	SD	Min	Max	Mean	Median	SD	Min	Max	Mean	Median	SD	Min	Max
Psychological well-being	53.16	53.67	8.22	25	70	52.17	52.50	9.47	14	70	52.76	53	9.62	14	70
Depression	16.19	16	12.37	7	56	24.26	22	10.32	12	56	24.50	22	10.67	14	56
Anxiety	14.67	14	11.89	7	56	22.22	18	8.78	10	56	18.96	16	7.4	12	56
Stress	19.43	20	13.92	7	56	27.26	26	10.57	14	56	24.77	22	10.67	14	56

Table 5 Results from the *F*-test and *p* values of mental health variables

	Whole sample		Male		Female	
	F	p	F	p	F	p
Psychological well-being	0.918	.400	0.222	.801	0.924	.397
Depression	128.173	< .001	62.326	< .001	62.385	< .001
Anxiety	81.918	< .001	58.660	< .001	32.561	< .001
Stress	58.453	< .001	46.269	< .001	18.631	.001

Table 6 Mean Difference and p values

	Period 1/Period 2		Period 1/Period 3		Period 2/Period 3	
	MD	p	MD	p	MD	p
Depression	− 8.071	< .001	− 8.305	< .001	− 0.234	.952
Anxiety	− 7.556	< .001	− 4.289	< .001	3.268	< .001
Stress	− 7.827	< .001	− 5.333	< .001	2.495	.005

A general linear model (Univariate) was used to consider the influence of the factors of sex and considered period on the indicators of mental well-being, depression, anxiety and stress. The results are presented in Table 7 and in Figs. 1, 2, 3 and 4.

We established a significantly higher increase in the levels of depression, anxiety, and stress in male students compared to the changes in the same indicators for female students during the pandemic. At the same time, both before and during the pandemic, all these indicators showed better mental health in young men than in young women (see Table 7).

Although the level of psychological well-being did not change significantly during the periods under consideration, the results of a Pearson's correlation analysis between the level of psychological well-being and indicators of depression, anxiety, and stress (Table 8) indicate that under normal circumstances the relationship between indicators

Table 7 Influence of sex and period on mental well-being, depression, anxiety and stress

	Period		Sex		Sex × Period	
	F	p	F	p	F	p
Psychological well-being	0.652;	.521	0.001	.978	0.173	.841
Depression	117.694	< .001	9.718	.002	6.883	.001
Anxiety	83.613	< .001	18.370	< .001	11.868	< .001
Stress	59.576	< .001	32.651	< .001	10.384	< .001
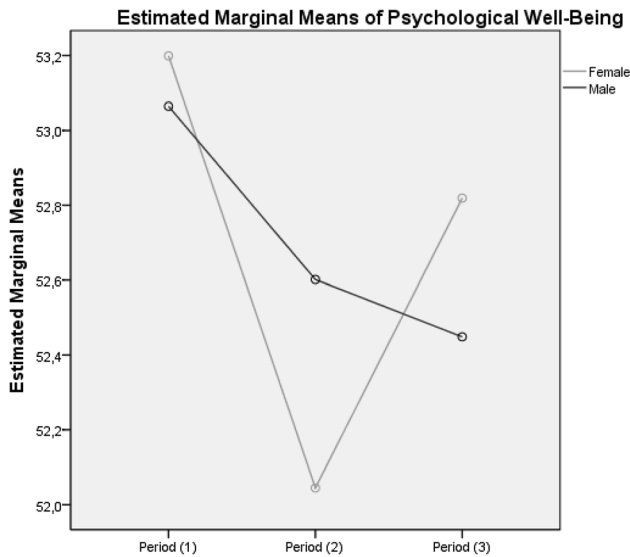
Fig. 1 Psychological well-being in different periods of time in women and men
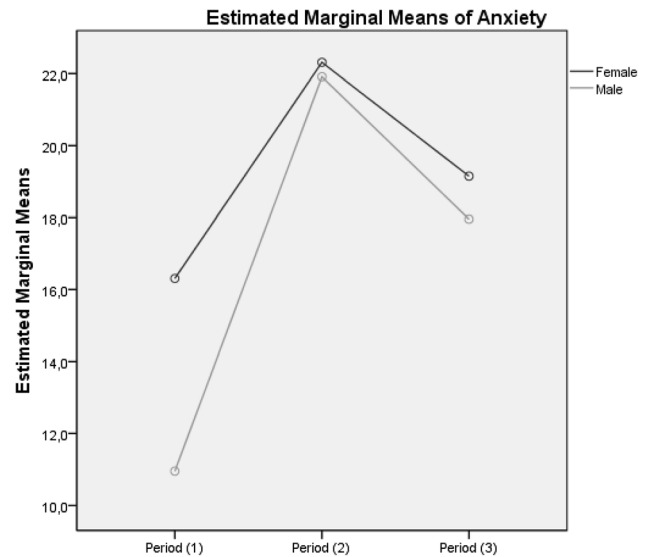
Fig. 3 Anxiety in different periods of time in women and men
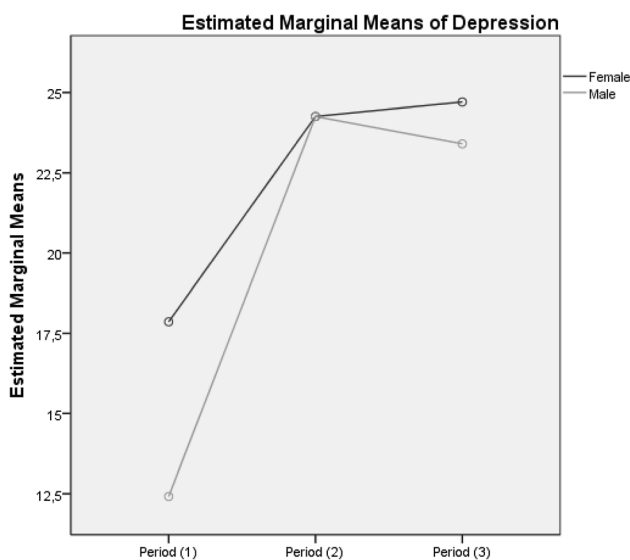
Fig. 2 Depression in different periods of time in women and men
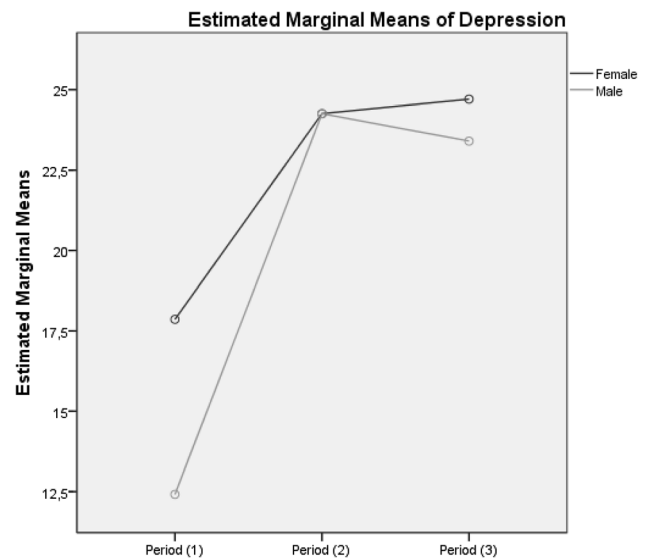
Fig. 4 Stress in different periods of time in women and men

of mental health and psychological well-being was less pronounced than in the other two periods, i.e., before the onset of the pandemic and after its announcement combined with the adoption of containment measures.

Table 8 Results of the correlation analysis (Pearson correlation coefficient) between the level of psychological well-being and levels of depression, anxiety, and stress in the considered periods

	Period 1		Period 2		Period 3	
	r	p	r	p	r	p
Depression	.158	< .001	− .521	< .001	− .502	< .001
Anxiety	− .069	.119	− .482	< .001	− .352	< .001
Stress	− .107	.016	− .398	< .001	− .425	< .001

Discussion

The present study examined how mental health and well-being indicators of Russian students have changed under the impact of the COVID-19 pandemic and containment measures, taking gender differences into account. The interaction of the gender and time period influence the indicators of depression, anxiety, and stress, while no influence on the level of psychological well-being was found. Dynamics of mental health indicators in women and men showed that, in contrast to normal circumstances when mental health indicators of men are significantly higher than those of women, with the aggravation of the epidemiological situation in the country, men's mental health indicators deteriorate more sharply and converge with the indicators of mental health for women.

A high prevalence of mental health problems among women has long been established. In particular, a more frequent occurrence of depression and anxiety, as well as a higher rate of comorbidity, has been described in women compared to men (Linzer et al., 1996; Piccinelli & Gomez Homen,1997). Depression is reported to be twice as common in women as in men (Murray & Lopez, 1996). Women, depending on age, are also two to three times more likely than men to suffer from anxiety disorders (Bernal-Morales et al., 2015; Waite & Creswell, 2014). The fact that the absolute indicators of depression, anxiety, and stress in women are generally higher than in men leads to the conclusion that women are more vulnerable in the face of adverse factors.

Our study showed that although women's levels of depression, stress and anxiety increased due to the pandemic as well as those of men, the severity of the differences in mental health indicators compared to normal circumstances is lower among women than among men. The results obtained differ from the data of other studies of the impact of the pandemic on mental health. Without considering gender differences in the development and long-term course of the mental health issues, previous research states poorer general mental health and higher

levels of depression and anxiety in women compared to men (Alonzi et al., 2020).

The results of our study indicate that in a situation of high uncertainty such as the coronavirus pandemic, the deterioration of the mental health of male students, at least in the short term, is more significant compared to the changes in the indicators of the mental health of women. Thus, it can be assumed that the pandemic, the containment restrictions and the lifestyle changes had a stronger immediate impact on men than on women.

It was also found that, in general, among university students in Russia, the level of psychological well-being did not change significantly during the considered period of the pandemic spread as compared to normal circumstances, while all indicators of mental health—depression, anxiety and stress—grew significantly.

It can be assumed that the level of psychological well-being, which is a fairly stable phenomenon, cannot sharply deteriorate in such a short time span. At the same time, as the revealed connections between the level of psychological well-being and the indicators of mental health (depression, anxiety and stress) are significantly more pronounced during the pandemic, we can predict a possible decrease in psychological well-being in the long term. This trend seems likely to continue if the uncertainty caused by the pandemic persists and the indicators of students' mental health do not stabilize.

Unfortunately, most of the studies providing a snapshot of students' mental state during a pandemic are based on different methods and do not allow us to reliably assess the impact of the pandemic on mental health. The obtained results may either be related to the pandemic or they can reflect a typical mental state of students, given the vulnerability of this group to mental health disorders. In this regard, studies that compare the results obtained in a similar context using the same methods before a pandemic and at different stages of its spread are of particular interest. For example, a study conducted in China after the COVID-19 outbreak at the very beginning of the spring semester included 3,611 university students and found that average anxiety levels were well above national norms

(Wang & Zhao, 2020). A longitudinal study of mental health in the pandemic found that the level of anxiety and depression among university students in China two weeks after self-isolation was higher than immediately before self-isolation (Li et al., 2020).

In our study, significantly better indicators of student mental health were obtained in the period before the COVID-19 became known to the world compared to the period immediately before the pandemic was declared, and during the continuing deterioration of the epidemiological situation both in Russia and around the world. The level of anxiety and stress among students turned out to be significantly higher during the period before the pandemic was announced, when the threat of COVID-19 spread was only declared. A few weeks later, when the situation continued to be complicated everywhere, even though containment measures were already taken, the stress and anxiety indicators decreased. The data obtained suggest that Russian students were able to quickly adapt to the changes and the containment measures after the educational process resumed and the level of uncertainty in the situation decreased.

Conclusion

Overall, when studying the impact of the pandemic on students' mental health, it is crucial to take into account the dynamics of their mental state within relatively short periods and to pay particular attention to gender differences. Altogether, these steps will allow to organize timely and targeted psychological help. The transition to distance learning at universities with the intention to fight the spread of COVID-19 not only significantly changed the educational process, but also dramatically modified students' lifestyle and the relationship with their fellow students and professors, which required important additional resources in an already difficult period of transition to adulthood. Taking into account the unpredictability of the future developments of events, related to the spread of COVID-19 in Russia and in the rest of the world, as well as the lack of clarity in the organization of the education system in the future, it is proposed to conduct a regular monitoring of mental health and psychological well-being of Russian students during the peak and downfall of future COVID-19 waves. It is critical to monitor how the signs of depression, stress, and anxiety change with adaptation to ongoing events. Additionally, it is important to determine whether the level of students' psychological well-being, which remained constant during the three examined periods, pointing to its greater stability compared to the indicators of mental health, will change with time and with respect to the development of events.

Limitations and Implication of Findings

The main limitation of the study is associated with sampling as considerably more young women took part in the research compared to the number of male participants. The non-balance of the sample in different time periods and in terms of gender representation is one of the most significant limitations of the manuscript. In order to understand the usability of the results, compare and analyze them, and formulate conclusions from them, the homogeneity of the SD was tested using the Levine criteria. In each of the examined periods, the difference between the SD in men and women is not significant, despite the non-balance of the sample. This allowed us to consider possible the comparison of the results of men and women in all three subsamples and sufficiently reasonable, including the second period, where the results were less stable with respect to the number of participants (specifically, men).

Indeed, the results of the second period are more susceptible to criticism with respect to the volume and non-balance of the sample, but we consider it to be rightful to discuss the obtained results, however, with caution, since the results of the methods from the second and third periods follow a similar dynamic of the investigated indicators.

In terms of the limitations concerning the volume of the sample and its demographic characteristics, especially for the second period, it is evident that our results can be considered as preliminary and that it would be desirable to have the opportunity to verify and confirm these results. A few months before coronavirus changed everyone's lives, and even in the first weeks of its spread, it was difficult to imagine the scale of the upcoming catastrophic losses facing humanity and the drastic changes which happened in the matter of a few weeks in all spheres of life. Despite the existing limitations, it seems relevant and possible to use the data available to us on the indicators of mental health of students, which were obtained as a result of our research on a national scale shortly before the outbreak of the pandemic and in the first days after the detection of cases of infection in Russia. We believe it is important to publish results that show the possibility of significant fluctuations in mental health indicators and their gender differences in a short period of time. Although SD is high in the DASS21 test, the fact that in period 2 and period 3 the average value on the scales increased almost twice, but the variance practically did not change, we believe that the data obtained can be considered correct and suitable for use.

In addition, the study was not longitudinal, which could have allowed for more definite conclusions about the dynamics of the mental health of students. However, the three groups of participants in different periods of time were equalized according to their main sociodemographic characteristics.

The findings of this study can be used in organizing and optimizing psychological services for such a vulnerable category as university students, both in mass emergencies, such as the COVID-19 pandemic, and in individual life crises.

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