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The Impact of Covid-19 Pandemic on Mental Health and Lifestyle in the Population of Kaunas City

Daiva Vizbaraitė, Julija Kleivaitė
Lithuanian Sports University, Kaunas, Lithuania

ABSTRACT

Background: Nationwide lockdowns, encompassing mass quarantine under stay-at-home ordinances, have already proven effective in controlling the COVID-19 outbreak. A prolonged homestay may also be associated with potential side effects, which may jeopardize people's health. Some undesirable consequences of prolonged homestay can be physical inactivity, behavioral addiction disorders and social isolation (Henry, Bovo, & Sanchis-Gomar, 2020). The aim of the study is to analyse the impact of COVID-19 on mental health and lifestyle in the population of Kaunas city.

Methods of research: anonymous online survey, which included questions on demographics, eating habits, alcohol and tobacco consumption, physical activity (Global Physical Activity Questionnaire), sleep quality (Pittsburgh sleep quality index) and mental health (Patient Health Questionnaire – 9).

Results: the study involved 388 respondents from Kaunas city. Women accounted for 80,7 %, and men for 19,3 % of respondents. Average of sedentary behavior during the pandemic – 430, 93 ± 233,47 min., before the pandemic – 324, 42 ± 216,21 min. ($p < 0,05$). Average of moderate-intensity physical activity (PA) before the pandemic 122,40 ± 148,98 min., and during the pandemic – 85,33 ± 98,08 min. ($p<0,05$). Average of vigorous-intensity PA during the pandemic – 21,20 ± 34,13 min, and before – 47,13 ± 104,08 ($p<0,05$). The consumption of fast food on daily basis before the pandemic – 0,8 %, during the pandemic – 1,5 % ($p<0,05$). Before the pandemic 15,7 % of respondents overate, during the pandemic – 30,2 % of respondents ($p<0,05$). Before the pandemic 1,8% of respondents consumed alcohol every day, during the pandemic – 3,4 % of respondents ($p<0,05$). Symptoms of depression: 7,26 ± 1,46 points before the pandemic and 10,40 ± 2,20 points during the pandemic ($p<0,05$). Quality of sleep: 5,73 ± 2,20 points before the pandemic and 6,44 ± 2,99 during the pandemic ($p<0,05$).

Conclusion: Sedentary behavior increased, while moderate-intensity and vigorous-intensity PA decreased ($p<0,05$) during the pandemic. The consumption of fruit and fast food increased during the pandemic ($p<0,05$) as well as the daily consumption of alcohol ($p<0,05$). The symptoms of depression were evaluated as mild (5–9 points) before the pandemic, and as moderate (10–14 points) during the pandemic ($p<0,05$). The quality of sleep was evaluated as worse during the pandemic than before the pandemic ($p<0,05$).

Keywords: COVID-19, lifestyle, mental health, population of Kaunas city.

INTRODUCTION

The whole world is fighting the COVID-19 pandemic, the spread of which can be slowed down by the reduction or total restriction of social and physical contact (World Health Organization, 2020). The announced quarantine raised many challenges and difficulties: distance education, the feeling of loneliness, diminished revenues, loss of job, the flow of negative information, etc. (Altena et al., 2020). All those difficulties affect mental health and lifestyle: physical activity

(PA) decreases, the consumption of sugar and fatty foods increases, the consumption of alcohol and smoking goes up, mental health and the quality of sleep grow worse (DiRenzo et al., 2020; Jackson, Brown, Shahab, Steptoe, & Fancourt, 2020; Li et al., 2020; Lippi et al., 2020; Stanton et al., 2020). The worsening of health during the COVID-19 pandemic increases the risk of COVID-19 complications (Ryan, Ravussin, & Heymsfield, 2020; Siordia, 2020), so the promotion of healthy lifestyle becomes especially acute. The analysis of scientific literature shows that the research on the impact of the COVID-19 pandemic on mental health, lifestyle or on one of the components of lifestyle has been done elsewhere in the world, but in Lithuania little research is being done. So, our aim is to analyse the impact of the COVID-19 pandemic on mental health and lifestyle in the population of Kaunas city.

METHODS

Research methods – anonymous internet questionnaire in which the aim of research, the use of its data, and anonymity of participants are indicated. The questionnaire consists of two parts: the demographic information and lifestyle questions. The first part contains questions on age, family status, education and main occupation. The second part contains questions on physical activity (PA), nutrition, harmful habits, mental health and sleep.

- Questions on nutrition and harmful habits are based on methodical recommendations of the Institute of Hygiene for lifestyle research organization and implementation in municipalities (Liuima et al., 2016). In order to evaluate nutritional habits, the questions on eating breakfast, consumption of vegetables and fruit, and on the frequency of their consumption are given. There also are questions on the intake of salt and junk food. For the evaluation of harmful habits the questions on the frequency of smoking and alcohol consumption are given.
- For the evaluation of physical activity, the Global Physical Activity Questionnaire (GPAQ) was used.
- For the evaluation of sleep quality, the Pittsburgh Sleep Quality Index (PSQI) questionnaire was used (Buysse et al., 1989). It consists of 19 self-rated items, which are combined to form seven "component" scores each of which has a range from 0–3, where 0 indicates no disorders, and 3 indicates gross disorders. The total score is the Pittsburgh sleep quality index, which has a range from 0 to 21. The higher score indicates poorer quality of sleep (Buysse, Reynolds, Monk, Berman, & Kupfer, 1989).
- For the evaluation of mental health, Patient Health Questionnaire – 9 was used: this is composed of nine questions, each of which has four possible answers – ("didn't bother at all", "on some days", "on more than half of all days", "almost every day"). The score range was from 0 to 3, where 0 means "didn't bother at all", while 3 means "almost every day". The total score of all answers shows symptoms of depression: 0–4 points – minimal symptoms; 5–9 – weak symptoms, 10–14 – moderate, 15–19 – moderately severe, 20–27 – severe symptoms (Kroenke, Spitzer, & Williams, 2001).

Methods of statistical analysis – descriptive statistics were used. For calculations, the statistical program SPSS version 22 was used. The differences between the qualitative features were assessed using chi square ($\chi 2$) criterion. For comparison of quantitative variables, student's t-test was used – PairSample T test. Relationships between variables were assessed with the Spearman (r) correlation criterion. The differences were statistically significant, when $p<0,05$.

RESULTS

Having analysed the obtained data, the average duration of sitting, walking, moderate-intensity and vigorous-intensity PA was determined in minutes per day. Also the average frequence of muscle strengthening (times per week) was determined before the COVID-19 pandemic and during it (table 1).

All data were compared on the gender aspect and it appeared that women statistically significantly more than men often engaged in stregthening of muscles. No more statistically significant differences were determined between genders.

Having compared eating habits before and during the COVID-19 pandemic, statistically significant differences were determined in overeating, fruit and fast food consumption before and during the pandemic. No statistically significant differences were determined in breakfast and vegetable eating before and during the pandemic.

Table 1. **Average duration of sitting, walking, moderate and vigorous intensity PA and frequency of muscle strengthening**

		Average ± SN	p
Sitting (min/d)	Before	324, 42 ± 216,21	p < 0,05
	During	430, 93 ± 233,47	
Walking (min/d)	Before	111,14 ± 131,35	p < 0,05
	During	87,70 ± 90,85	
Moderate-intensity PA (min/d)	Before	122,40 ± 148,98	p < 0,05
	During	85,33 ± 98,08	
Vigorous-intensity PA (min/d)	Before	47,13 ± 104,08	p < 0,05
	During	21,20 ± 34,13	
Stengthening of muscles (times/week)	Before	3,54 ± 12,07	p > 0,05
	During	3,06 ± 8,53	

Table 2. **Comparison of eating habits before and during the COVID-19 pandemic**

		Before COVID-19 pandemic	During COVID-19 pandemic	p value
		Percent	Percent	
Breakfast eating	Yes	66,4	66,2	p > 0,05
	No	26,3	19,1	
	Sometimes	7,3	14,7	
Overeating	Yes	15,7	30,2	p < 0,05
	No	47,7	31,7	
	Sometimes	36,6	38,1	
Fruit consumption	No consumption	1	1	p < 0,05
	Less than once per week	12,1	10,3	
	1–3 times per week	35,3	31,7	
	4–6 times per week	22,2	27,6	
	One or more times per day	29,4	29,4	
Vegetable consumption	No consumption	0	0	p > 0,05
	Less than once per week	2,6	5,4	
	1–3 times per week	24	16,5	
	4–6 times per week	39,2	41,2	
	One or more times per day	34,2	36,9	
Salt consumption	No added salt	43,6	39,9	p < 0,05
	Added when there is lack of it	53,4	56,7	
	Added in any case	3,1	3,4	
Fast food consumption	No consumption	19,6	22,2	p < 0,05
	1–2 times per week	66,5	52,8	
	3–4 times per week	12,4	17	
	5–6 times per week	0,8	6,4	
	Daily	0,8	1,5	

Having analysed the data, no statistically significant differences were determined in fruit and salt consumption between both genders. Women statistically significantly more often than men ate breakfast before the pandemic and during it, but overeating was statistically significantly greater among men before and during the pandemic. It was also determined, that before and during the pandemic the consumption of vegetables 4–6 times per week was statistically significantly greater among women than men. It was noticed that women used a statistically significantly smaller amount of fast food than men did before and during the pandemic.

Table 3. **Comparison of harmful habits before and during the Covid-19 pandemic**

		Before COVID-19 pandemic	During COVID-19 pandemic	p value
		Percent	Percent	
Alcohol consumption	Yes	66,8	67	p > 0,05
	No	33,2	33	
Frequence of alcohol consumption	No consumption	30,4	34,8	p < 0,05
	1–2 times per week	57,7	44,3	
	3–4 times per week	10,1	14,2	
	5–6 times per week	0	3,4	
	Daily	1,8	3,4	
Smoking	Yes	33	35,1	p > 0,05
	No	67	64,9	
Frequence of smoking	No smoking	59,8	58,5	p > 0,05
	1–2 times per week	7	6,7	
	3–4 times per week	3,4	4,1	
	5–6 times per week	3,4	4,4	
	Daily	26,5	26,3	

Having compared harmful habits before and during the COVID-19 pandemic (table 3) a statistically significant difference was stated between the consumption of alcohol before and during the pandemic.

Having compared harmful habits in terms of gender, it was determined that before and during the pandemic men used more alcohol than did women ($p<0,05$). It was also determined that during the pandemic almost twice as many men than women used alcohol daily ($p<0,05$). The obtained data show that statistically significantly more men than women smoked before and during the pandemic ($p<0,05$). Daily smoking was also statistically more common among men than women before and during the pandemic ($p<0,05$).

A statistically significant difference was determined between the genders before the pandemic: noticeably more women felt stressed very often ($p<0,05$), but during the pandemic no such difference was noticed.

The mental health questionnaire is composed of 9 items, each of which scores from 0–3 points. The total score shows the severity of depression. Table 9 shows the average score in every question, then the total average score of all questions and the comparison of scores before the COVID-19 pandemic and during it. It was determined that items 8 and 9 were statistically significantly greater during the pandemic than before it. It was also noticed that the total score was statistically significantly greater during the pandemic than before it. According to the questionnaire methodology, the symptoms of depression in respondents, which were evaluated as weak (5–9 points) before the pandemic, became moderate (10–14 points). No differences were noticed when the data were compared in terms of gender (table 5).

Sleep quality was assessed using the PSQI, which is composed of seven groups (components). Each answer is scored from 0 to 3. In the table below (table 6) the average scores of all components is given and also the average of total score. No statistically significant difference was noticed only in group 4 (usual effectiveness of sleep). The total score of general sleep quality before the COVID-19 pandemic was statistically significantly lower than during the pandemic, and that shows the poorer quality of sleep during the pandemic. Having compared the quality of sleep in terms of gender (table 7) no significant difference was noticed.

Having analysed connections between lifestyle components and the indicators of mental health before the COVID-19 pandemic, statistically significant results were determined ($p < 0,05$). Statistically significant connections were determined between sitting and depression symptoms, and also between walking, moderate and vigorous intensity PA, frequency of muscle strengthening, alcohol consumption and symptoms of depression. Also the connection between alcohol consumption and smoking was determined. It was determined that with less walking and shortening of moderate and vigorous intensity PA, and also

Table 4. **Comparison of mental health before the COVID-19 pandemic and during it**

	Before COVID-19 pandemic	**During COVID-19 pandemic**	**p value**
	Average ± SN	**Average ± SN**	
Little interest or pleasure in activities	1,02 ± 0,80	1,49 ± 0,71	p < 0,05
Feeling sad, depressed or hopeless	1,17 ± 0,45	1,56 ± 0,78	p < 0,05
Difficulties in falling asleep and sleeping; sleeping too long	1,24 ± 0,72	1,46 ± 0,82	p < 0,05
Feeling tired or lacking energy	1,25 ± 0,58	1,56 ± 0,75	p < 0,05
Poor appetite or overeating	1,26 ± 1,09	1,91 ± 0,65	p < 0,05
Poor self-image – feeling a loser or feeling that you disappointed yourself or your family	0,88 ± 0,64	1,59 ± 0,79	p < 0,05
Concentration difficulties in reading a newspaper or watching TV	0,37 ± 0,48	0,64 ± 0,55	p < 0,05
Moving or speaking so slowly that this is noticed by other people or vice versa – being so anxious and restless that you move much more than usual.	0,45 ± 0,20	0,15 ± 0,36	p < 0,05
Thoughts that it is better to be dead or thoughts about self-harming.	0,03 ± 0,17	0,02 ± 0,15	p > 0,05
Total sum of points:	*7,26 ± 1,46*	*10,40 ± 2,20*	*p < 0,05*

Table 5. **Comparison of mental health in terms of gender before the COVID-19 pandemic and during it**

		Women	**Men**	**p value**
		Average ± SN	**Average ± SN**	
Total score	*Before pandemic*	*7,24* ± 1,53	*7,36* ± 1,34	p > 0,05
	During pandemic	*10,43* ± 2,13	*10,31* ± 2,34	

Table 6. **Comparison of sleep quality before the COVID-19 pandemic and during it**

	Before COVID-19 pandemic	**During COVID-19 pandemic**	**p value**
	Average ± SN	**Average ± SN**	
Group 1: subjective quality of sleep	0,95 ± 0,55	1,13 ± 0,67	p < 0,05
Group 2: latency of sleep	1,36 ± 1,09	1,60 ± 1,14	p < 0,05
Group 3 : duration of sleep	0,59 ± 0,03	0,95 ± 0,05	p < 0,05
Group 4: usual effectiveness of sleep	0,00 ± 0,00	0,003 ± 0,05	p > 0,05
Group 5: sleep disturbances	1,13 ± 0,34	0,99 ± 0,05	p < 0,05
Group 6: the use of sleeping pills	1,12 ± 0,34	0,99 ± 0,05	p < 0,05
Group 7: feeling unwell during daytime	1,47 ± 0,63	1,63 ± 0,71	p < 0,05
Total sum of points:	*5,73 ± 2,20*	*6,44 ± 2,99*	*p < 0,05*

Table 7. **The quality of sleep compared in terms of gender before the COVID-19 pandemic and during it**

		Women	**Men**	**p value**
		Average ± SN	**Average ± SN**	
Total sum of points:	*Before pandemic*	*5,74 ± 2,34*	*5,68 ± 1,51*	p > 0,05
	During pandemic	*6,31 ± 2,88*	*7,00 ± 3,39*	

muscle strengthening, stress increases. With the increase of experienced stress, the quality of sleep grows worse and vice versa.

After having done the analysis of lifestyle components and the indicators of mental health during the COVID-19 pandemic, a statistically significant connection was noticed between walking and smoking – alcohol consumption, between the quality of sleep and stress, and also between the quality of sleep and symptoms of depression. It was

determined that with the decrease of vigorous PA, the symptoms of depression became stronger and vice versa.

DISCUSSION

While analysing one lifestyle component, namely, physical activity, we determined that duration of walking, moderate and vigorous intensity PA during the COVID-19 pandemic decreased, while the frequence of muscle stengthening remained the same. When we compared the indicators of PA with the recommendations of WHO, we determined that respondents even during the pandemic daily achieved about 30 % of recommended (300 min) norm of moderate intensity PA. Talking about muscle strengthening, the subjects exceeded the recommendations (twice per week) before the pandemic and during the pandemic (World Health Organization, 2020). The results of our research show that the COVID-19 pandemic has negative effect on the habits of PA. The authors indicate that the changes of daily routine due to the COVID-19 pandemic is one of the main causes of the decreased PA, no matter that most of physical activities were substituted by distant training (Ricci et al., 2020). Research performed in England showed the negative influence on PA, while research in Australia showed not only negative but also positive changes in physical activity (Robinson et al., 2021; Stanton et al., 2020). In Italy almost 10 per cent of respondents engaged in sports activities more often during the pandemic than before it. They exercised 5 times or more per week (DiRenzo et al., 2020). Other authors state that 42 per cent of respondents walked less during the pandemic than before it (Alomari, Khabour, & Alzoubi, 2020). In Spain a bigger decrease in PA among men than among women was noticed (Rodríguez-Larrad et al., 2021), but we determined that most indicators of PA, compared in terms of gender, were not significantly different, except that women statistically significantly more often engaged in muscle strengthening. Authors determined that after the introduction of strict measures for management of the pandemic, the duration of walking shortened but was compensated by vigorous PA and intensive training at home (Luciano, Cenacchi, Vegro, & Pavei, 2020). Sadly, our research did not show such a tendency. We, and some other authors, noticed a longer duration of sitting (Alomari et al., 2020; Ammar et al., 2020; Cheval et al., 2020; Romero-Blanco et al., 2020). It was also noticed that duration of sitting became longer not only on weekdays but also on weekends (Flanagan et al., 2021).

Having compared eating habits before and during the COVID-19 pandemic, we determined that habits of eating vegetables and fast food changed ($p<0,05$). Other authors also indicate that there really are changes in eating habits. It was noticed that breakfast was eaten more often during the pandemic, but our research data show that breakfast eating habits changed only among men (Flanagan et al., 2021). Literature shows that the number of people who eat two or fewer portions of fruit per day increased, while no significant difference in vegetable consumption was noticed (Flanagan et al., 2021). Our research shows different results: consumption of fruit once or more times per day remained the same, while the consumption of vegetables increased. Also when compared in terms of gender, it was determined that before the pandemic more men than women ate vegetables once or more times per day. Sadly, having compared our research data with the healthy eating recommendations (*Health training and disease prevention center,* 2020) the consumption of vegetables and fruit is not sufficient. It is recommended to eat fruit and vegetables five times per day, while data show that only one third of subjects eat fruit and vegetables once or more times per day.

While analysing alcohol consumption before and during the pandemic, we determined that the number of people who used alcohol did not change, but the daily consumption of alcohol almost doubled. Authors indicate that most respondents stated that their consumption of alcohol during the pandemic did not change and only 13 per cent admitted they used more alcohol than usual during the pandemic. It was noticed that the consumption of alcohol decreased among younger people, and that might have been influenced by the closure of bars, cafés, night clubs etc. (Chodkiewicz, Talarowska, Miniszewska, Nawrocka, & Bilinski, 2020). Research in Australia indicated that already on the first month of the COVID-19 pandemic, every fifth adult person consumed more alcohol than usual (Tran, Hammarberg, Kirkman, Nguyen, & Fisher, 2020), but other investigations show that the larger part of respondents consumed the same amount of alcohol during the pandemic as

before it (Robinson et al., 2021). We determined a statistically significant connection between alcohol consumption and increased smoking. Authors indicate that smoking habits changed during the pandemic: 45 per cent of smokers indicated that they smoked more often during the pandemic and the number of cigarettes smoked increased, but around 40 per cent of respondents indicated that the pandemic had no effect on their smoking habits (Gendall, Hoek, Stanley, Jenkins, & Every-Palmer, 2021). More than 50 per cent of respondents in Spain stated that they smoked more during the pandemic (Papandreou, Arija, Aretouli, Tsilidis, & Bulló, 2020). During our research we did not determine any change either in number of smokers or in frequency of smoking before and during the COVID-19 pandemic. Research in New Zealand showed that more women than men smoked during the pandemic, and that is related to stress (Gendall et al., 2021), but we did not notice that relationship. We determined that more men smoked during the pandemic. Compared in terms of gender the level of stress was the same in both genders.

When we compared the Pittsburgh Sleep Quality Index before and during the pandemic, we determined that the quality of sleep worsened during the pandemic, but the duration of sleeping increased. Other authors also declare the same results (Cellini, Canale, Mioni, & Costa, 2020; Di Renzo et al., 2020; Romero-Blanco et al., 2020; Targa et al., 2020). Research in Spain showed that the Sleep Quality Index reached 8 points (8,17± 4,43), (Maestro-Gonzalez, Sánchez-Zaballos, Mosteiro-Díaz, & Zuazua-Rico, 2021), while in our research that index did not even reach 7 points during the pandemic (6,44 ± 2,99). Research in China also showed a higher Sleep Quality Index than in our research (8,48 ± 4,65), but it should be indicated that data of both countries were collected during an especially great spread of COVID-19 (Maestro-Gonzalez et al., 2021; Xiao, Zhang, Kong, Li, & Yang, 2020).

In order to assess mental health of respondents, Patient Health Questionnaire – 9 was used, which indicates the severity of depression symptoms (0–4 points – minimal, 5–9 points – weak, 10–14 points – moderate, 15–19 points – moderately severe, 20–27 points – severe (Kroenke et al., 2001). Unfortunately, in our research symptoms of depression were the highest when compared with data from Spain and Greece. In both countries the symptoms of depression were assessed as weak (In Spain 5,0 ± 4,8, in Greece – 5,6 ± 5,3), while in our research they were average (10,4 ± 2,24) (Papandreou et al., 2020). In China when the spread of COVID-19 was very high, only weak symptoms of depression were determined (8,3 ± 6,4) (Yao, 2020). Research in Austria indicated only weak symptoms of depression (6,19 ± 5,4) in respondents, but when compared in terms of gender, it was noticed that depression symptoms were more severe among women than among men (Pieh, Budimir, & Probst, 2020). In our research no statistically significant difference was noticed when data were compared in terms of gender. The authors state that people who were more severely affected by the COVID-19 pandemic had also more severe symptoms of depression (Lin et al., 2021). It was stated that worsened mental health was related to the overload of information about COVID-19, contradictory data from international sources and different scientists, data given by experts and a lot of negative information in mass media (Altena et al., 2020; De Girolamo et al., 2020).

Different connections among lifestyle components are mentioned in the literature, which indicate the impact of one indicator on others. Research shows interconnection between physical activity and mental health, while mental health is interconnected with the quality of sleep (Ernstsen & Havnen, 2021; Hertenstein et al., 2019; López-Bueno et al., 2020; Sanford, Suchecki, & Meerlo, 2014; Stanton et al., 2020). The authors declare that there is a threefold connection between physical activity, mental health and sleep quality: physical activity improves mental health and sleep quality, while good sleep quality relieves the symptoms of depression. Depression, in turn, negatively effects sleep and physical activity (Cheval et al., 2020; Grossman, Hoffman, Palgi, & Shrira, 2021; Ji, Bastien, Ellis, Hale, & Grandner, 2019; Schuch et al., 2019). The data of our research confirm these connections. We determined that the longer the sitting, the worse the mental health and sleep quality. We also determined that with the increase of vigorous PA and frequence of muscle strengthening, symptoms of depression became weaker and vice versa. Though the authors indicate that a connection between symptoms of depression and the consumption of alcohol during the COVID-19 pandemic was noticed, we did not notice a statistically significant connection (Jacob et al., 2021). Research data show that a connection between mental health and unhealthy fast food

consumption was determined. It is indicated that for improvement of mental health it is necessary to reduce the consumption of sugar and fatty foods. Fast food not only negatively affects mental health, but also impairs sleep quality (Hafizurrachman & Hartono, 2021; Kang, Kim, & Sunwoo, 2020). We did not determine a connection between the consumption of fast food and symptoms of depression. We also did not notice that fast food reduced the quality of sleep.

It was noticed that social capital had influence on sleep quality, symptoms of depression and stress during the COVID-19 pandemic. The authors stress that vast social capital and socializing in social networks is an important and effective way to manage the growing stress level, symptoms of depression and reduced sleep quality during the pandemic (Valencia-Garcia, Simoni, Alegría, & Takeuchi, 2012).

CONCLUSIONS

1. The duration of sitting increased during the pandemic, while moderate and vigorous-intensity PA decreased ($p<0,05$). The consumption of fruit and fast food increased during the pandemic ($p<0,05$), while consumption of vegetables remained the same ($p>0,05$). Daily intake of alcohol increased during the pandemic ($p<0,05$), while no statistically significant difference was determined in smoking habits before and during the pandemic. The quality of sleep worsened during the pandemic ($p<0,05$).
2. Symptoms of depression in respondents before the COVID-19 pandemic were assessed as weak (5–9 points), while during the COVID-19 pandemic as moderate (10–14 points) ($p<0,05$). Stress was experienced more often during the pandemic than before it ($p<0,05$).

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