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UNIVERSITY STUDENTS' STRATEGIES OF COPING WITH STRESS: COMPLEMENTARY STUDY TWO YEARS AFTER THE BEGINNING OF COVID-19 PANDEMIC

Strategie radzenia sobie ze stresem stosowane przez studentów: Badanie uzupełniające dwa lata po wybuchu pandemii COVID-19

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Abstract

The objective of this paper is to present results of the study on the strategies for coping with stress among students of Polish universities at the end of COVID-19 pandemic, that is, at the beginning of 2022. The Mini-COPE questionnaire was used, which was filled in by 475 students of Polish universities. The gathered empirical material indicated that in 2022 respondents more often used strategies such as humor and self-blame, whereas, the frequency of using the strategy related to religious coping turned out to be lower in comparison with research from 2020. Furthermore, the trend of lower demand for emotional support and higher trend of denial were noticed in the research from 2022.

Keywords university students, strategies of coping with stress, coronavirus pandemic.

Streszczenie

Celem artykułu jest przedstawienie wyników badania dotyczącego strategii radzenia sobie ze stresem wśród studentów polskich uczelni pod koniec pandemii COVID-19, czyli na początku 2022 roku. W badaniach wykorzystano kwestionariusz Mini-COPE, który wypełniło 475 studentów polskich uczelni. Zgromadzony materiał empiryczny wykazał, że w 2022 r. respondenci częściej stosowali strategie takie jak humor i obwinianie się, natomiast częstotliwość stosowania strategii religijnych okazała się niższa w porównaniu z badaniami z 2020 r. Co więcej, w badaniu z 2022 roku zauważono mniejsze zapotrzebowanie na wsparcie emocjonalne i wyższe tendencje do zaprzeczania niż w badaniu z 2020 roku.

Słowa kluczowe: studenci, strategie radzenia sobie ze stresem, pandemia koronawirusa.

Introduction

The coronavirus pandemic, which started in 2020, has changed the way of functioning of people around the world. They had to reorganize their everyday life routines overnight. Moreover, it was a huge challenge for educational institutions, including universities, which had to adjust to teaching outside lecture rooms. The long-lasting nature of the COVID-19 pandemic resulted in conducting prospective studies among Polish students, which allowed comparing results obtained at the first stage in 2020 with results obtained in 2022.

The newest data regarding the direction of the pandemic development seems to confirm that contemporary society has to accept the consequences and learn how to live with the pandemic. Have students succeeded in this scope, and how were they coping with consecutive pandemic waves? Research conducted provides several important answers to these questions, since it was performed in two crucial points in time, at the beginning of the COVID-19 pandemic (Babicka-Wirkus et al., 2021), and in the period when many countries forecasted the end of the pandemic. The COVID-19 pandemic disturbed the functioning of higher education, and understanding the impact thereof, especially on students, has significant implications for public health and the condition of our society (Conrad et al., 2020; Kecojevic et al., 2020).

It is generally felt that the COVID-19 pandemic has changed the way of our functioning in many areas. One of them is universities' use of online teaching. In 2022 as many as 25% respondents stated that balancing education with professional, family and household duties was the biggest challenge related to online learning (online education). Another research study from the same year indicated that students recognized the shift to distance learning as a significant source of stress. It resulted not only from social isolation forced by the pandemic. Learning at home also meant losing academic resources (e.g., access to the university network, direct contact with lecturers and peers), as well as an increase in self-distraction (e.g., taking care of other household members) (Reyes-Portillo et al., 2022).

Furthermore, online learning hindered, or prevented, other aspects of personal development, such as internships, research and foreign trips (Lederer et al., 2021).

According to Clabaugh et al. (2021) as many as 33% of students reported that their academic development has been seriously threatened by COVID-19. Research conducted in Spain showed an increase in anxiety and depression in participants after the outbreak of the pandemic. The age and gender were independent predictors, and coping strategies mitigated the impact of the perceived stress on mental health. Authors of the research noticed that preventative strategies directed at individual mental health promotion during consecutive pandemics in the future should take into account intervention in the scope of sociodemographic, psychological and neurobiological factors (Cabello-Toscano et al., 2023).

Moreover, it is noticed that the COVID-19 pandemic, especially in the beginning stage, caused a deterioration of mental health and mental condition of many people (Ahmad et al., 2022; Cullen et ai., 2020; Kelly, 2020). It was shown that loneliness, fears related to COVID-19 – and low stress tolerance determined clinical levels of depression, anxiety and PTSD symptoms (Liu et al, 2020).

At the same time, it should be noted that social and behavioral sciences have significant possibilities to support people in coping with various problems that arose in reaction to COVID-19 (Bavel et al., 2020). To this end, it is necessary to learn and understand behaviors of people or selected groups. This is, among others, the objective of the presented research.

Since the research was conducted in the period when humanity has functioned for over 2 years with the awareness of existence of the COVID-19, we assumed that obtained results would differ from those achieved in research from 2020. In the period of these two years, an increase in knowledge on coronavirus could be observed. An advancement of medicine contributed to the development of the first medicines to support treatment of and vaccines against illness caused by this virus. Many people fell ill with COVID-19, sometimes even several times. All of the above resulted in anxiety being lower toward the end of the pandemic than at its beginning, as can be confirmed even just by analyzing the most frequently searched information in Google. While in 2020 people around the world by far most frequently searched for information regarding the coronavirus and most willingly read the newest information related thereto (Topics, 2020), in 2022, COVID-19 was not even included in the top 10 most frequently searched-for topics (Topics, 2022). It should be believed that it results not only from the fact that people became accustomed to this threat, but also from occurrence of other important problems that attracted attention of the public opinion, for example Russia's conflict with Ukraine.

In Poland, on 1 July 2023 the COVID-19 pandemic officially ended, but specialists warn against other threats of new coronavirus variants. They have already been

felt by Great Britain, where the number of infections with the forgotten Eris variant[1] coronavirus has increased. Experts forewarned that the virus would continue to mutate regardless of how many people ignore it. A new threat may also be the currently spreading EG.5.1 variant of the coronavirus. The World Health Organization (WHO) has already been watching it closely. The WHO reacted swiftly and on 19 July 2023 added EG.5.1 as another coronavirus variant (SARS-CoV-2) with a severe course of respiratory system infection onto its list of variants subject to monitoring (Lee, 2023). The UK Health Security Agency estimated that as of 20 July the EG.5.1 constituted approximately 14.55% of all COVID-19 cases and was growing in Great Britain at a rate of 20.51% per week. In the United States EG.5 variants increased from estimated 11.9%of all COVID-19 cases from the beginning of July to 17.3% until the beginning of August, in compliance with data from the Centers for Disease Control and Prevention (CDC) COVID-19 Data Tracker. At the same time, in the USA various COVID-19 indicators show a growing trend, and the number of hospitalizations due to COVID-19 indicators increased by 12.1% at the end of July 2023.

All of the above makes us aware that we are constantly at a risk of various threats, including those caused by microbes and viruses that can decimate communities and contribute to many psychological issues. It is important to notice these threats, learn about them and be able to cope with the consequences of them. One of the groups which is especially exposed to the consequences of such mental health threats, are students. Students who lack specific skills for coping with stress can be particularly exposed to psychopathology in the face of high levels of coronavirus-related stress (Mushquash and Grassia, 2022).

Our research objectives allow verification of pandemic consequences for high-risk people, in particular young people. A better understanding of the impact of pandemic on students, their coping strategies and the circumstances that can put them at a higher risk, can provide grounds for more effective future interventions in the scope of public health, as well as verify the hitherto implemented strategies.

The implemented research project was aimed at: indicating students' prevailing strategies for coping with stress in the final phase of the pandemic, assessment of the impact of sociodemographic factors on prevailing strategies for coping with stress, and diagnosis of differences in students' strategies for coping with stress, depending on the type of expected support and the entity providing such support. An important objective of research results presented herein also constitutes comparing results from 2020 with results from 2022.

[1] Previously consecutive Omicron variants and subvariants were named unofficially, for instance, Arcturus or the Kraken.

Material and method

Data presented in the article concern strategies for coping with stress used by Polish university students in the last months of the coronavirus pandemic. The aim of the research was to obtain answers regarding strategies for coping with stress used by students during the last phase of the pandemic. Therefore, the following research questions were asked:

1. What strategies for coping with stress were most often used by students during the final phase of the coronavirus pandemic?
2. How do sociodemographic factors differentiate strategies for coping with stress used by students in the last phase of the pandemic?

The multidimensional COPE inventory by Carver et al. (1989; 1997) is one of the most popular measures of strategies for coping with stress. It can be used to measure dispositional (typical) and situational coping. The Mini-COPE inventory in the Polish adaptation by Juczyński and Ogińska-Bulik (2009) was used in the current study. The Polish version of the Mini-COPE inventory comprises 28 items that form 14 coping strategies. It is used to measure typical reactions in situations of intense stress.

The study was conducted in Poland in January 2022. 475 respondents studying at various Polish universities participated. Similarly as in the study in 2020 (Babicka-Wirkus et al, 2021), in 2022 respondents were students of 17 Polish higher education institutions: universities, technical universities, medical schools and training colleges. The most representative groups came from four universities located in various parts of Poland. They include: the University of Gdańsk (UG) – 44.3%, Pomeranian University in Słupsk (UP) – 16.4%, Adam Mickiewicz University in Poznań (UAM) – 14.9% and University of Silesia (US) – 11.2%. Students from other universities comprised 13.1% of the total sample (different universities – DU).

Table 1.
Sociodemographic characteristics of respondents according to the universities they attend [%].

		UG	UP	UAM	US	DU	Total
Gender	female	74.9	75.6	91.5	98.1	56.5	77.7
	male	24.6	24.4	7.0	43.5	43.5	21.95
	different	0.5	0.0	1.4	0.0	0.0	0.4
Age	18–20	24.2	11.5	39.4	32.1	25.8	25.5
	21–24	64.5	41.0	39.4	58.5	51.6	54.5
	25–30	10.4	6.4	11.3	3.8	14.5	9.7
	31 and over	0.9	41.0	9.9	5.7	8.1	10.3
	village	18.0	42.3	31.0	37.7	25.8	27.2

		UG	UP	UAM	US	DU	Total
Place of residence	town up to 20 thousand residents	10.9	20.5	12.7	0.0	14.5	12.0
	town with between 20 and 100 thousand residents	16.1	33.3	25.4	24.5	35.5	23.8
	city with over 100 thousand residents	55.0	3.8	31.0	37.7	24.2	37.1
Year of study	I undergraduate	18.5	15.4	45.1	35.8	27.4	25.1
	II undergraduate	18.0	21.8	2.8	15.1	30.6	17.7
	III undergraduate	38.4	26.9	9.9	18.9	14.5	26.9
	I graduate	5.2	20.5	19.7	22.6	11.3	10.5
	II graduate	13.3	3.8	11.3	7.5	11.3	10.5
	I-III uniform Master's studies	0.0	9.0	4.2	0.0	4.8	2.7
	IV-V uniform Master's studies	6.6	2.6	7.0	0.0	0.0	4.4
Mode of study	full-time	63.5	53.8	85.9	94.3	66.1	69.1
	extramural	36.5	46.2	14.1	5.7	33.9	30.9

The majority of participants were women. They constituted over 77% of respondents. Two respondents declared that they did not fit the binary division of genders. Over half of the respondents were aged 21–24 years old, whereas the smallest group in terms of age was of people aged 25–30 years old. As far as the place of residence is concerned, the biggest number of respondents came from the largest Polish cities, whereas citizens of the smallest towns constituted the least numerous group. Respondents were most frequently persons who graduated from the 3rd year of the first cycle of studies. The least numerous group were students of long-cycle Master's degree studies. It is worth underlining that 2/3 of respondents studied full-time.

Collecting data from students coming from various parts of Poland was possible due to the use of the snowball sampling method. First, we sent the link to the online questionnaire to students from the University at which we are employed. We asked them to invite students from other universities to participate in the study. Participation in the study was voluntary. At the beginning of the study, respondents were informed of the purpose of the study and the manner in which the data would be used. Furthermore, they were informed that collected data would be analyzed anonymously. In order to fill in the questionnaire, the respondent had to click on the answer 'I agree to take part in the study'. The research project was approved by the Commission of Bioethics and Human Rights acting at the Pomeranian University in Słupsk (IP.621.6.2021).

Analyses

Statistical analyses were carried out using the IBM SPSS Statistics 28.0 software. The program was used to calculate basic descriptive statistics together with the Kolmogorov-Smirnov test of normality. Additionally, the Cronbach's α coefficient was used to calculate the reliability of the Mini-COPE scales. To compare coping strategies between two groups in terms of the analyzed strategies, Mann-Whitney's *U* test was used. To compare a higher number of groups, a one-way analysis of variance was used, and if the variance was not equal between the groups, Welch's correction was additionally applied. Tuckey's HDS test (if variance was homogenous) or Dunnett's T3 test (if variance was heterogeneous) was used for post hoc analysis. To determine correlations between strategies, Pearson's *r* correlation analysis was carried out. The significance level was set at $\alpha = 0.05$.

Results

Dominant student strategies of coping with stress in the situation of pandemic

In step one, basic descriptive statistics together with the Kolmogorov-Smirnov test of normality were calculated. The analysis showed that neither of the analyzed variables assumed a distribution close to the Gauss curve, and that skewness values were within the <-2;2> range, which means that it was not significant (George and Mallery, 2016).

Additionally, the Cronbach's α coefficient was used to calculate the reliability of the Mini-COPE scales. The analysis showed satisfactory reliability for most of the scales. Relatively low reliability was obtained for the scales of acceptance, humor, self-distraction, denial and venting of emotions. Detailed results have been shown in Table 2.

Table 2
Basic descriptive statistics with the Kolmogorov-Smirnov test of normality and reliability (Cronbach's α) (2022)

	M	*Me*	*SD*	*Sk.*	*Kurt.*	*Min.*	*Max.*	*D*	*p*	*α*
Active coping	1.77	2.00	0.73	-0.49	-0.11	0.00	3.00	021	<0.001	0.68
Planning	1.85	2.00	0.69	-0.54	0.36	0.00	3.00	0.22	<0.001	0.71
Positive reframing	1.64	2.00	0.71	-0.44	-0.06	0.00	3.00	0.22	<0.001	0.77
Acceptance	2.07	2.00	0.60	-0.39	0.31	0.00	3.00	0.22	<0.001	0.58
Humor	1.23	1.00	0.67	0.29	-0.14	0.00	3.00	0.17	<0.001	0.49
Religious coping	0.65	0.00	0.87	1.27	0.61	0.00	3.00	0.29	<0.001	0.87
Seeking emotional support	1.74	2.00	0.80	-0.38	-0.39	0.00	3.00	0.20	<0.001	0.81

	M	*Me*	*SD*	*Sk.*	*Kurt.*	*Min.*	*Max.*	*D*	*p*	*α*
Seeking instrumental support	1.60	2.00	0.80	-0.29	-0.53	0.00	3.00	0.20	<0.001	0.74
Self-distraction	1.74	2.00	0.69	-0.37	-0.03	0.00	3.00	0.16	<0.001	0.40
Denial	0.81	0.50	0.70	0.72	0.00	0.00	3.00	0.19	<0.001	0.53
Venting emotions	1.57	1.50	0.64	-0.25	0.10	0.00	3.00	0.17	<0.001	0.22
Substance use	0.55	0.00	0.81	1.38	0.97	0.00	3.00	0.34	<0.001	0.92
Behavioral disengagement	0.82	0.50	0.67	0.59	-0.26	0.00	3.00	0.18	<0.001	0.70
Self-blame	1.50	1.50	0.90	-0.03	-0.97	0.00	3.00	0.13	<0.001	0.74

Correlations between strategies of coping with stress

Pearson's correlation analysis was used to examine the relationships between individual coping strategies in the current sample.

Active coping was positively correlated with planning (strong correlation), positive reframing, emotional support seeking, instrumental support seeking, self-distraction and self-blame (weak correlations). The higher the frequency of active coping, the higher the frequencies of the above strategies as well. Active coping was moderately and negatively correlated with behavioral disengagement and substance use, which means that the higher the frequency of active coping, the lower the frequency of behavioral disengagement and substance use as used strategies.

Planning was positively and weakly-to-moderately correlated with positive reframing, acceptance, emotional support seeking, instrumental support seeking, venting and self-blame. A negative and weak correlation occurred between planning and substance use, and a moderate one for behavioral disengagement – the higher the frequency of planning, the lower the frequency of substance use and behavioral disengagement as strategies.

Positive reframing was weakly or moderately and positively correlated with acceptance, humor, religious coping, emotional support seeking, instrumental support seeking, and also weakly and negatively correlated with denial, substance use, behavioral disengagement and self-blame.

Acceptance was positively and weakly correlated with humor, and weakly and negatively with self-distraction, denial, behavioral disengagement and self-blame.

Humor was weakly and positively correlated with venting of emotions and substance use.

A weak and positive correlation also occurred between religious coping and emotional support seeking and instrumental support seeking, and weak and negative correlation occurred with substance use.

Emotional support seeking was strongly and positively correlated with instrumental support seeking, and weakly and positively correlated with self-distraction, venting of emotions, and weakly and negatively correlated with behavioral disengagement.

Instrumental support seeking was positively and weakly-to-moderately correlated with self-distraction and venting of emotions.

Self-distraction was weakly-to-moderately and positively correlated with denial, venting of emotions, substance use, behavioral disengagement and self-blame.

Denial, venting of emotions, substance use, behavioral disengagement, and self-blame were positively correlated with each other on a weak-to-moderate level.

Other correlations between strategies were not statistically significant. Detailed results of analyses have been presented in Table 3.

Table 3
Pearson's correlation coefficients between the strategies for coping with stress

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Active coping	-													
Planning	0.63**	-												
Positive reframing	0.27**	0.34**	-											
Acceptance	-0.04	0.12**	0.25**	-										
Humor	-0.08	-0.07	0.16**	0.19**	-									
Religious coping	0.06	0.08	0.13**	0.01	-0.08	-								
Seeking emotio-nal support	0.23**	0.26**	0.28**	0.09	0.02	0.10**	-							
Seeking instru-mental support	0.27**	0.32**	0.27**	0.04	-0.03	0.17**	0.74**	-						
Self-distraction	0.17**	0.08	0.06	-0.10*	0.05	0.03	0.12**	0.24**	-					
Denial	-0.02	-0.09	-0.14**	-0.21**	-0.02	-0.01	-0.03	0.03	0.20**	-				
Venting emotions	0.05	0.12**	0.01	0.02	0.10*	-0.02	0.27**	0.34**	0.35**	0.20**	-			
Substance use	-0.14**	-0.16**	-0.23**	-0.02	0.19**	-0.13**	-0.07	-0.05	0.15**	0.17**	0.18**	-		
Behavioral disengagement	-0.29**	-0.31**	-0.23**	-0.11*	-0.01	-0.02	-0.13**	-0.04	0.18**	0.35**	0.22**	0.34**	-	
Self-blame	0.15**	0.10*	-0.23**	-0.24**	-0.03	-0.03	-0.01	0.04	0.27**	0.35**	0.24**	0.21**	0.40**	-

Sociodemographic factors and strategies of coping with stress

Gender and strategies of coping with stress

To determine gender differences in the scope of strategies for coping with stress, Mann-Whitney's *U* test analysis was carried out. The analysis showed statistically significant gender differences for humor, emotional support seeking, instrumental support seeking, self-distraction, denial and venting of emotions. Studied men reported using humor significantly more often than women, but they reported using emotional support seeking, instrumental support seeking, self-distraction, as well as denial and venting of emotions less frequently. These differences are analogous to the differences shown in the study conducted in 2020. The results of the analyses have been shown in Table 4.

Table 4.
Gender differences in strategies for coping with stress.

	Women (*n* = *369*)			Men (*n* = 104)			*Z*	*p*	*r*
	Mean range	*Me*	*IQR*	Mean range	*Me*	*IQR*			
Active coping	238.10	2.00	0.50	233.09	2.00	1.00	-0.34	0.734	0.02
Planning	238.38	2.00	0.50	232.12	2.00	0.50	-0.43	0.668	0.02
Positive reframing	231.25	2.00	1.00	257.39	2.00	0.50	-1.78	0.075	0.08
Acceptance	238.06	2.00	0.50	233.25	2.00	0.50	-0.33	0.739	0.02
Humor	227.03	1.00	0.75	272.38	1.50	1.00	-3.07	**0.002**	0.14
Religious coping	235.78	0.00	1.00	241.31	0.00	1.00	-0.39	0.693	0.02
Seeking emotional support	246.59	2.00	0.75	202.98	1.50	1.00	-2.95	**0.003**	0.14
Seeking instrumental support	246.47	2.00	1.00	203.40	1.50	1.00	-2.91	**0.004**	0.13
Self-distraction	247.81	2.00	0.50	198.63	1.50	1.00	-3.33	**0.001**	0.15
Denial	245.47	1.00	1.00	206.93	0.50	1.00	-2.61	**0.009**	0.12
Venting emotions	248.92	1.50	0.75	194.69	1.50	1.00	-3.69	**<0.001**	0.17
Substance use	235.73	0.00	1.00	241.50	0.00	1.00	-0.43	0.669	0.02
Behavioral disengagement	241.00	1.00	0.50	222.80	0.50	1.00	-1.23	0.218	0.06
Self-blame	238.38	1.50	1.00	232.12	1.50	1.50	-0.42	0.676	0.02

Age and strategies of coping with stress

Using a one-way analysis of variance (ANOVA), age groups were compared in terms of using strategies for coping with stress. The analysis showed statistically significant differences of 6 strategies: active coping, planning, positive reframing, venting of

emotions, behavioral disengagement, and self-blame. To determine the character of intergroup differences, an additional post hoc analysis using Tuckey's HSD test was carried out when the variance was equal between the groups, and Dunnett's T3 test, when the variance was unequal.

Respondents aged 31 years old and older reported statistically significantly higher level of active coping than 18–20-year-olds ($p < 0.001$), 21–24-year-olds ($p = 0.001$) and 25–30-year-olds ($p = 0.033$). People aged 31 years old and older showed higher level of planning than 18–20-year-olds ($p < 0.001$) and 21–24-year-olds ($p = 0.020$). Analogous differences were observed for positive reframing – those aged 31 years old and older showed a higher level of this strategy compared to 18–20-year-olds ($p = 0.002$) and 21–24-year-olds ($p = 0.002$). 18–20-year-olds reported denial more frequently than 25–30-year-olds ($p = 0.023$). 25–30-year-olds reported a lower intensity of strategies concentrated on substance use than younger people aged 18–20 years old ($p = 0.005$) and 21–24 years old ($p = 0.012$). 18–20-year-olds reported more frequently self-blame than 25–30-year-olds ($p = 0.045$) and people aged 31 years old and older ($p = 0.004$), whereas 21–24-year-olds – more frequently than people aged 31 years old and older ($p = 0.034$).

Having taken into consideration the correction of the significance level of multiple comparisons, no differences were noted between age groups in terms of venting of emotions. Detailed results of the analyses have been shown in Table 5.

Table 5
The one-way analysis of variance for differences in strategies for coping with stress depending on the age of respondents

	18–20 age (n = 121)		21–24 age (n = 259)		25–30 age (n = 46)		31 and over (n = 49)		F	p	η^2
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*			
Active coping	1.64	0.78	1.77	0.69	1.70	0.88	2.13	0.58	7.37[a]	<0.001	0.03
Planning	1.69	0.75	1.86	0.65	1.87	0.78	2.13	0.56	5.88[a]	<0.001	0.03
Positive reframing	1.57	0.75	1.62	0.71	1.62	0.71	1.95	0.52	5.73[a]	0.001	0.02
Acceptance	2.11	0.64	2.08	0.59	2.05	0.62	2.01	0.49	0.33	0,805	0.00
Humor	1.29	0.74	1.25	0.65	1.11	0.70	1.12	0.55	1.36	0.254	0.01
Religious coping	0.60	0.84	0.63	0.87	0.57	0.85	0.93	0.91	2.01	0.111	0.01
Seeking emotional support	1.74	0.80	1.75	0.81	1.61	0.78	1.87	0.72	0.83	0.475	0.01
Seeking instrumental support	1.59	0.82	1.59	0.81	1.47	0.80	1.77	0.69	1.14	0.331	0.01

	18–20 age (n = 121)		21–24 age (n = 259)		25–30 age (n = 46)		31 and over (n = 49)		F	p	η^2
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*			
Self--distraction	1.81	0.74	1.76	0.68	1.59	0.71	1.60	0.61	1.86	0.136	0.01
Denial	0.92	0.77	0.81	0.68	0.58	0.63	0.72	0.65	3.00	0.030	0.02
Venting emotions	1.60	0.72	1.63	0.58	1.37	0.64	1.36	0.69	3.87[a]	0.011	0.03
Substance use	0.69	0.98	0.58	0.79	0.29	0.50	0.37	0.57	5.70[a]	0.001	0.02
Behavioral disengage-ment	0.91	0.72	0.83	0.65	0.68	0.66	0.67	0.60	2.16	0.092	0.01
Self-blame	1.67	0.91	1.53	0.90	1.26	0.94	1.15	0.71	5.08	0.001	0.03

Year of studies and strategies of coping with stress

Using a one-way analysis of variance (ANOVA), particular years of studies were compared in terms of using strategies for coping with stress. The analysis did not show significant differences between compared groups in the scope of strategies. Detailed results of the analyses have been shown in Table 6.

Table 6
The one-way analysis of variance for differences in strategies for coping with stress depending on the year of studies

		N	*M*	*SD*	*F*	*p*	η^2
Active coping	I U	331	1.72	0.72	2.05	0.105	0.04
	II U	110	1.90	0.74			
	I–III M	13	1.65	0.69			
	IV–V M	21	1.88	0.77			
Planning	I U	331	1.81	0.71	1.78	0.151	0.03
	II U	110	1.94	0.64			
	I–III M	13	1.77	0.70			
	IV–V M	21	2.07	0.68			
Positive reframing	I U	331	1.61	0.72	1.01	0.389	0.02
	II U	110	1.75	0.70			
	I–III M	13	1.65	0.66			
	IV–V M	21	1.60	0.58			
Acceptance	I U	331	2.10	0.59	0.62	0.600	0.02
	II U	110	2.03	0.61			
	I–III M	13	1.96	0.56			
	IV–V M	21	2.00	0.72			

		N	M	SD	F	p	η2
Humor	I U	331	1.25	0.69	0.23	0.860	0.01
	II U	110	1.19	0.61			
	I–III M	13	1.23	0.67			
	IV–V M	21	1.24	0.75			
Religious coping	I U	331	0.61	0.87	2.17[a]	0.107	0.05
	II U	110	0.60	0.78			
	I–III M	13	1.23	1.13			
	IV–V M	21	1.02	1.07			
Seeking emotional support	I U	331	1.72	0.82	0.78[a]	0.511	0.01
	II U	110	1.78	0.74			
	I–III M	13	1.77	0.83			
	IV–V M	21	1.93	0.62			
Seeking instrumental support	I U	331	1.55	0.81	2.05[a]	0.123	0.03
	II U	110	1.65	0.72			
	I–III M	13	1.65	1.05			
	IV–V M	21	1.95	0.74			
Self-distraction	I U	331	1.75	0.69	0.65	0.586	0.03
	II U	110	1.70	0.69			
	I–III M	13	1.96	0.69			
	IV–V M	21	1.69	0.68			
Denial	I U	331	0.83	0.70	1.41	0.240	0.03
	II U	110	0.78	0.71			
	I–III M	13	0.73	0.44			
	IV–V M	21	0.52	0.73			
Venting emotions	I U	331	1.58	0.63	1.41	0.240	0.03
	II U	110	1.48	0.64			
	I–III M	13	1.54	0.83			
	IV–V M	21	1.81	0.64			
Substance use	I U	331	0.60	0.85	1.91[a]	0.144	0.03
	II U	110	0.42	0.70			
	I–III M	13	0.38	0.65			
	IV–V M	21	0.64	0.71			
Behavioral disengagement	I U	331	0.87	0.68	2.03	0.109	0.03
	II U	110	0.70	0.64			
	I–III M	13	0.65	0.69			
	IV–V M	21	0.81	0.68			
Self-blame	I U	331	1.53	0.90	1.17	0.319	0.02
	II U	110	1.37	0.91			
	I–III M	13	1.50	0.68			
	IV–V M	21	1.67	0.98			

[a] – Welch's correction was applied. I U–I Undergraduate, II U–II Undergraduate, III U–III Undergraduate, I G–I Graduate, II G–II Graduate, I-III M–I-III uniform Master's studies, IV-V M–IV-V uniform Master's studies

Place of residence and strategies of coping with stress

In the next step, differences in the use of strategies of coping with stress depending on the place of residence were examined. To this end, the one-factor ANOVA was carried out. It showed significant intergroup differences for two strategies: religious coping and instrumental support seeking. Participants living in villages reported religious coping more frequently than participants living in cities with over 100,000 inhabitants ($p = 0.002$). Participants living in villages reported instrumental support seeking less frequently than participants living in towns of up to 20,000 inhabitants ($p = 0.021$). No differences were noted between other groups. The results of analyses have been presented in Table 7.

Table 7
The one-way analysis of variance for differences in strategies for coping with stress depending on the place of residence of respondents

	Village (n = 129)		Town up to 20 thousand residents (n = 50)		Town with between 20 and 100 thousand residents (n = 113)		City with over 100 thousand residents (n = 212)		F	p	η^2
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*			
Active coping	1.65	0.76	1.80	0.76	1.87	0.68	1.78	0.73	1.84	0.138	0.01
Planning	1.75	0.74	1.88	0.63	1.89	0.64	1.88	0.72	1.12	0.339	0.01
Positive reframing	1.58	0.65	1.71	0.84	1.70	0.69	1.63	0.72	0.75	0.524	0.01
Acceptance	2.09	0.57	2.11	0.61	2.08	0.57	2.05	0.63	0.20	0.897	0.01
Humor	1.22	0.67	1.22	0.65	1.19	0.68	1.28	0.68	0.40	0.752	0.01
Religious coping	0.87	0.98	0.67	0.91	0.63	0.81	0.49	0.78	4.39[a]	**0.005**	0.03
Seeking emotional support	1.65	0.77	1.86	0.82	1.78	0.77	1.75	0.82	0.06	0.363	0.01
Seeking instrumental support	1.43	0.81	1.79	0.73	1.63	0.79	1.64	0.80	3.34	**0.019**	0.02
Self-distraction	1.66	0.68	1.81	0.71	1.65	0.70	1.83	0.68	2.49	0.059	0.02
Denial	0.82	0.74	0.85	0.53	0.79	0.67	0.79	0.74	0.20[a]	0.893	0.01
Venting emotions	1.52	0.64	1.48	0.52	1.54	0.71	1.65	0.63	1.88[a]	0.133	0.01
Substance use	0.51	0.75	0.44	0.73	0.49	0.79	0.67	0.87	1.84[a]	0.140	0.01
Behavioral disengagement	0.84	0.67	0.93	0.67	0.76	0.64	0.81	0.69	0.83	0.475	0.01
Self-blame	1.43	0.91	1.51	0.90	1.41	0.86	1.61	0.91	1.43	0.232	0.01

[a] – Welch's correction was applied

Program of studies and strategies of coping with stress

To compare full-time and part-time students' use for coping strategies, Mann-Whitney's *U* test was used. The analysis showed that full-time students reported self-distraction and self-blame more frequently than part-time students. No differences were noted between groups in terms of other strategies. The results of analyses have been presented in Table 8.

Table 8
Comparison of full-time and part-time students' use of strategies for coping with stress

	Full-time students (n = 328)			Extramural students (n = 147)			*Z*	*p*	*R*
	Mean range	*Me*	*IQR*	Mean range	*Me*	*IQR*			
Active coping	233.74	2.00	0.50	247.51	2.00	1.00	-1.04	0.298	0.05
Planning	233.42	2.00	0.50	248.22	2.00	1.00	-1.13	0.258	0.05
Positive reframing	232.41	2.00	1.00	250.46	2.00	0.50	-1.37	0.171	0.06
Acceptance	239.04	2.00	0.50	235.69	2.00	0.50	-0.26	0.796	0.01
Humor	241.70	1.00	0.50	229.73	1.00	0.50	-0.90	0.366	0.04
Religious coping	239.64	0.00	1.00	234.33	0.00	1.00	-0.42	0.673	0.02
Seeking emotional support	238.88	2.00	1.00	236.04	2.00	0.50	-0.21	0.831	0.01
Seeking instrumental support	244.16	2.00	1.00	224.26	1.50	1.00	-1.50	0.134	0.07
Self-distraction	247.40	2.00	1.00	217.02	1.50	0.50	-2.29	**0.022**	0.10
Denial	239.76	0.50	1.50	234.07	0.50	1.00	-0.43	0.668	0.02
Venting emotions	245.50	1.50	1.00	221.26	1.50	1.00	-1.84	0.066	0.08
Substance use	241.02	0.00	1.00	231.26	0.00	1.00	-0.81	0.420	0.04
Behavioral disengagement	245.87	1.00	1.00	220.43	0.50	1.00	-1.92	0.055	0.09
Self-blame	250.19	1.50	1.38	210.80	1.50	1.50	-2.93	**0.003**	0.13

Type of expected support and strategies of coping with stress

Another analysis took into consideration differences for the level of strategies for coping with stress depending on the need for a given type of support. To this end, the one-factor ANOVA was also carried out.

The post-hoc analysis showed that participants who indicated a need for mental support reported using the strategy of active coping less frequently than participants expecting organizational support ($p = 0.015$). People who needed mental support reported positive reframing less frequently than people who expected emotional ($p < 0.001$), financial ($p = 0.011$) or organizational ($p < 0.001$) support, or did not

need support at all ($p < 0.001$). Furthermore, people who indicated psychological support reported intensification of this strategy less frequently than people expecting organizational support ($p = 0.027$), or people who did not need support ($p = 0.021$). Participants who indicated the need for emotional support reported intensification of religious coping more frequently than people in need of psychological ($p = .006$) and financial support ($p = 0.003$). People in need of emotional support reported instrumental support seeking more frequently than people expecting financial support ($p= 0.016$), or people who did not need support ($p = 0.021$). People who did not need support reported intensification of the strategies of self-distraction less frequently than people in need of psychological ($p < 0.001$), mental ($p = 0.011$), or emotional ($p = 0.002$) support. Similar differences occurred in the case of venting of emotions – people who did not need support reported this strategy less frequently than people who expected psychological ($p = 0.001$), mental ($p = 0.007$), or emotional support ($p = 0.001$). Additionally, people in need of psychological support reported venting more frequently than people in need of financial support ($p = 0.032$). Respondents who indicated the need for psychological support reported denial more frequently than respondents who did not need support ($p = 0.034$). The level of the strategy related to substance use was significantly higher in the case of people who did not need support than in the case of persons who needed psychological ($p = 0.025$), or mental support ($p = 0.031$). People who expected psychological support reported behavioral disengagement more frequently than people who needed emotional ($p = 0.020$), financial ($p< 0.001$), or organizational ($p < 0.001$) support, or who did not need support ($p< 0.001$), whereas people who needed mental support reported these strategies more frequently than people who needed financial ($p < 0.001$), or organizational support ($p = 0.001$), or did not need support ($p < 0.001$). Respondents who indicated the need for emotional support reported intensification of behavioral disengagement as a strategy more frequently than respondents who indicated the need for financial ($p = 0.006$), or organizational support ($p = 0.017$), or who did not indicate any need for support ($p < 0.001$). Similar differences were observed with regard to self-blame as a strategy for coping with stress. Respondents who indicated the need for psychological support reported this strategy more frequently than respondents who indicated the need for financial ($p < 0.001$), or organizational support ($p = 0.041$), or who did not indicate any need for support ($p < 0.001$). Similarly, respondents who indicated the need for mental support reported this strategy more frequently than respondents who indicated the need for financial ($p < 0.001$), or organizational support ($p = 0.009$), who did not indicate any need for support ($p < 0.001$), or who indicated the need for emotional support ($p = 0.043$). People in need of emotional support reported intensification of self-blame more frequently than people who did not need support ($p = 0.024$). The results of analyses have been presented in Table 9.

Table 9
The one-way analysis of variance for differences in strategies for coping with stress depending on the type of expected support

Coping strategy	Type of support	*N*	*M*	*SD*	*F*	*p*	η^2
Active coping	Psychological	91	1.69	0.60	2.88[a]	0.017	0.03
	Psychiatric	26	1.42	0.73			
	Emotional	97	1.81	0.67			
	Financial	88	1.77	0.84			
	Organizational	36	2.04	0.63			
	No suport needed	120	1.80	0.82			
Planning	Psychological	91	1.77	0.55	1.57[a]	0.172	0.02
	Psychiatric	26	1.77	0.70			
	Emotional	97	1.91	0.63			
	Financial	88	1.74	0.77			
	Organizational	36	2.01	0.63			
	No suport needed	120	1.91	0.78			
Positive reframing	Psychological	91	1.47	0.66	6.60	<0.001	0.07
	Psychiatric	26	1.10	0.76			
	Emotional	97	1.74	0.75			
	Financial	88	1.61	0.70			
	Organizational	36	1.89	0.59			
	No suport needed	120	1.78	0.65			
Acceptance	Psychological	91	1.94	0.60	1.29	0.266	0.01
	Psychiatric	26	2.10	0.66			
	Emotional	97	2.07	0.55			
	Financial	88	2.10	0.61			
	Organizational	36	2.18	0.60			
	No suport needed	120	2.11	0.61			
Humor	Psychological	91	1.10	0.67	2.24	0.050	0.02
	Psychiatric	26	1.38	0.78			
	Emotional	97	1.18	0.67			
	Financial	88	1.38	0.60			
	Organizational	36	1.33	0.60			
	No suport needed	120	1.21	0.69			
Religious coping	Psychological	91	0.50	0.77	3.46[a]	0.006	0.04
	Psychiatric	26	0.63	0.94			
	Emotional	97	0.95	0.96			
	Financial	88	0.48	0.71			
	Organizational	36	0.68	0.93			
	No suport needed	120	0.66	0.91			

Coping strategy	Type of support	N	M	SD	F	p	η2
Seeking emotional support	Psychological	91	1.75	0.67	2.25[a]	0.053	0.03
	Psychiatric	26	1.60	0.89			
	Emotional	97	1.95	0.75			
	Financial	88	1.61	0.93			
	Organizational	36	1.63	0.68			
	No suport needed	120	1.80	0.78			
Seeking instrumental support	Psychological	91	1.73	0.80	3.37[a]	0.007	0.03
	Psychiatric	26	1.54	0.82			
	Emotional	97	1.82	0.67			
	Financial	88	1.45	0.83			
	Organizational	36	1.68	0.63			
	No suport needed	120	1.49	0.85			
Self- -distraction	Psychological	91	1.92	0.68	590	<0.001	0.06
	Psychiatric	26	2.00	0.68			
	Emotional	97	1.86	0.60			
	Financial	88	1.65	0.72			
	Organizational	36	1.81	0.54			
	No suport needed	120	1.51	0.71			
Denial	Psychological	91	0.95	0.68	3.37	0.005	0.04
	Psychiatric	26	1.06	0.84			
	Emotional	97	0.88	0.75			
	Financial	88	0.74	0.69			
	Organizational	36	0.63	0.58			
	No suport needed	120	0.66	0.65			
Venting emotions	Psychological	91	1.74	0.61	6.51	<0.001	0.07
	Psychiatric	26	1.85	0.60			
	Emotional	97	1.71	0.61			
	Financial	88	1.45	0.66			
	Organizational	36	1.44	0.54			
	No suport needed	120	1.38	0.65			
Substance use	Psychological	91	0.71	0.92	4.11[a]	0.002	0.06
	Psychiatric	26	1.10	1.09			
	Emotional	97	0.45	0.74			
	Financial	88	0.59	0.76			
	Organizational	36	0.42	0.67			
	No suport needed	120	0.35	0.64			
Behavioral disengagement	Psychological	91	1.20	0.61	18.70	<0.001	0.17
	Psychiatric	26	1.19	0.63			
	Emotional	97	0.92	0.65			
	Financial	88	0.61	0.58			
	Organizational	36	0.54	0.60			
	No suport needed	120	0.53	0.58			

Coping strategy	Type of support	N	M	SD	F	p	η2
Self-blame	Psychological	91	1.86	0.84	10.36	<0.001	0.10
	Psychiatric	26	2.12	0.85			
	Emotional	97	1.56	0.81			
	Financial	88	1.27	0.91			
	Organizational	36	1.36	0.79			
	No suport needed	120	1.20	0.89			

[a] – *Welch's correction was applied*

Source of expected support and strategies of coping with stress

The carried out one-factor ANOVA revealed significant differences between compared groups distinguished by the source of support for 5 strategies: emotional support seeking, instrumental support seeking, self-distraction, venting of emotions and substance use. A detailed post hoc analysis revealed that participants who did not expect support reported instrumental support seeking less frequently than participants who expected support from their families (p<0.001) or friends (p=0.001). Participants who did not expect support also reported self-distraction less frequently than participants who expected support from their families (p=0.030) and other type of support (p=0.047), as well as reported venting of emotions less frequently than participants who expected support from their friends (p=0.016), or other types of support (p=0.039). Participants who expected support from their families reported substance use less frequently than participants who expected support from their friends (p=0.018). Having taken into consideration the correction of the significance level, no differences were noted between groups in terms of emotional support seeking. The results of analyses have been presented in Table 10.

Table 10
The one-way analysis of variance for differences in strategies for coping with stress depending on the source of expected support

Coping strategy	Type of support	*N*	*M*	*SD*	*F*	*p*	η^2
Active coping	Family	181	1.82	0.70	1.19	0.315	0.01
	Friends	140	1.79	0.68			
	University	27	1.78	0.68			
	Country	74	1.58	0.80			
	Other	21	1.81	0.81			
	I do not expect support	32	1.78	0.89			
Planning	Family	181	1.89	0.67	0.65[a]	0. 666	0.01
	Friends	140	1.85	0.60			
	University	27	1.94	0.78			
	Country	74	1.73	0.75			
	Other	21	1.86	0.87			
	I do not expect support	32	1.77	0.88			

Coping strategy	Type of support	N	M	SD	F	p	η2
Positive reframing	Family	181	1.74	0.70	1.30	0.263	0.01
	Friends	140	1.61	0.65			
	University	27	1.52	0.73			
	Country	74	1.53	0.76			
	Other	21	1.57	0.76			
	I do not expect support	32	1.64	0.80			
Acceptance	Family	181	2.04	0.62	1.49	0.191	0.02
	Friends	140	2.03	0.57			
	University	27	2.17	0.59			
	Country	74	2.13	0.60			
	Other	21	2.10	0.60			
	I do not expect support	32	2.30	0.55			
Humor	Family	181	1.22	0.67	0.48	0.790	0.01
	Friends	140	1.20	0.65			
	University	27	1.33	0.59			
	Country	74	1.24	0.67			
	Other	21	1.36	0.74			
	I do not expect support	32	1.33	0.82			
Religious coping	Family	181	0.72	0.91	1.38	0.228	0.01
	Friends	140	0.66	0.89			
	University	27	0.37	0.77			
	Country	74	0.68	0.85			
	Other	21	0.33	0.58			
	I do not expect support	32	0.58	0.83			
Seeking emotional support	Family	181	1.86	0.72	3.73[a]	0.004	0.04
	Friends	140	1.84	0.77			
	University	27	1.57	0.90			
	Country	74	1.59	0.89			
	Other	21	1.40	0.74			
	I do not expect support	32	1.41	0.86			
Seeking instrumental support	Family	181	1.72	0.77	5.33	<0.001	0.05
	Friends	140	1.69	0.74			
	University	27	1.33	0.80			
	Country	74	1.50	0.83			
	Other	21	1.33	0.80			
	I do not expect support	32	1.09	0.87			
Self-distraction	Family	181	1.82	0.65	2.93	0.013	0.03
	Friends	140	1.75	0.67			
	University	27	1.63	0.58			
	Country	74	1.63	0.76			
	Other	21	1.98	0.70			
	I do not expect support	32	1.42	0.80			

Coping strategy	Type of support	N	M	SD	F	p	η2
Denial	Family	181	0.83	0.63	1.29	0.266	0.01
	Friends	140	0.85	0.73			
	University	27	0.56	0.64			
	Country	74	0.83	0.79			
	Other	21	0.60	0.68			
	I do not expect support	32	0.75	0.79			
Venting emotions	Family	181	1.57	0.62	2.67	0.021	0.03
	Friends	140	1.64	0.64			
	University	27	1.59	0.65			
	Country	74	1.50	0.69			
	Other	21	1.76	0.60			
	I do not expect support	32	1.23	0.60			
Substance use	Family	181	0.40	0.71	2.95[a]	0.016	0.03
	Friends	140	0.69	0.87			
	University	27	0.80	0.81			
	Country	74	0.58	0.84			
	Other	21	0.69	0.87			
	I do not expect support	32	0.48	0.79			
Behavioral disengagement	Family	181	0.79	0.66	1.36	0.240	0.01
	Friends	140	0.92	0.64			
	University	27	0.76	0.74			
	Country	74	0.75	0.70			
	Other	21	0.98	0.68			
	I do not expect support	32	0.69	0.69			
Self-blame	Family	181	1.47	0.88	1.56	0.169	0.02
	Friends	140	1.64	0.89			
	University	27	1.44	0.88			
	Country	74	1.32	0.95			
	Other	21	1.69	0.84			
	I do not expect support	32	1.41	0.99			

[a] – *Welch's correction was applied*

Discussion

The aim of the studies was to examine the strategies for coping with stress among Polish university students during the last phase of the coronavirus pandemic. An important element of the presented studies also comprised verification of sociodemographic conditions which could have been of importance for using specific strategies. While summarizing the conducted analyses, it can be indicated that at the end of the pandemic students reported humor and self-blame more frequently in comparison to 2020 (Babicka-Wirkus et al., 2021). The result could be due to adjustment to the restriction of social contact and various group activities, as well as trips abroad, a situation which has lasted for two years. Humor performs a crucial role in difficult

situations. Using humor gives the possibility to tame unfavorable conditions or deride them, which allows subduing fear (Nezlek & Derks, 2001). A higher level of self-blame reported by Polish students in 2022 in comparison with the group studied in 2020 (Babicka-Wirkus et al., 2021) can indicate that respondents, having grown used to the pandemic situation, experienced a bigger need to deal with specific conditions on their own. While comparing themselves to other people, who started balcony bands, organized online seminars or blogged, respondents could have felt that they were not as resourceful or creative in dealing with the problematic situation. The aftermath might also be the increased percentage of people developing depression, which was accompanied by problems with receiving professional support (Gambin et al., 2020). What is also interesting, in 2020 Polish students used the strategy of religion coping more frequently than in 2022 (Babicka-Wirkus et al., 2021). Although this strategy was still more frequently applied by inhabitants of villages than large cities with over 100,000 inhabitants. This situation may result from having become accustomed to atypical living conditions and a series of media-covered cases related to the issues inside the Catholic Church that damaged its authority among young people.

Furthermore, the trend of lower demand for emotional support and higher trend of denial were noticed at the end of the pandemic (Babicka-Wirkus et al., 2021). It may result from: having become accustomed to and adapting to the pandemic situation; less virulent variants of the virus; the gradual increase in the level of vaccinating the society; and the gradual mitigation of restrictions related to limiting meetings and direct social interactions.

The results of studies indicated that in both the first (Babicka-Wirkus et al., 2021) and second study, men reported using humor significantly more often than women, but they reported using emotional support seeking, instrumental support seeking, self-distraction, as well as denial less frequently.

Both at the beginning and at the end of the pandemic it was observed that the oldest respondents (over 31 years old) more frequently reported constructive strategies for coping with stress and, in particular, active coping, planning, and positive reframing. These participants, however, reported strategies related to denial, substance use and self-blame statistically significantly less frequently than groups of younger participants. These results can be interpreted in the context of having more life experience and higher level of maturity related to the development of identity (Authors, 2021), as well as with regard to the fact that young students tend to have weaker coping skills (Miranda & Tolentino, 2023). Furthermore, people with a higher level of maturity believe that they should use their inborn strengths and abilities to face the challenges of the pandemic, and have realistic plans of actions and ways of coping (Au et al., 2023).

The level and organization of studies (full-time and part-time) did not differentiate studied groups in terms of preferences regarding strategies for coping with stress.

The results of studies also indicated a difference related to the place of residence of respondents, that is, people who lived in villages reported strategies related to religious coping more frequently and to instrumental support seeking less frequently. A similar situation took place during study at the beginning of the pandemic (Babicka-Wirkus et al., 2021). A higher percentage of religiosity in Poland occurs in the countryside, which explains the obtained research results. Furthermore, a positive relation between trusting in God and religious coping is straight-forward, since the essence of religious coping is a trusting relationship with a higher being. This conclusion is compliant with reports from other studies stating that religious people used religious coping in stress situations more often (Pargament, 2001).

The meta-analysis showed that poorly perceived social support is related to post-traumatic stress disorder, and the lack of social support during, or post trauma has a stronger impact than pre-trauma factors (Brewin et al., 2000). In the literature, the buffering model of social support, which assumes that effective social support can mitigate unfavorable psychological consequences of stress, is also emphasized (Aneshensel and Stone, 1982). Importantly, the perceived social support can help protect individuals against negative implications of a negative style of coping, as well as serve as a signal of a mental crisis in the specific case of epidemic-induced isolation (Yang et al., 2022).

In the context of results of our study concerning strategies depending on the type of expected support, statistically significant differences in the areas of positive reframing (the highest results concern organizational support expectations, and the lowest – mental support expectations), self-distraction, venting of emotions and self-blame (for each of these strategies the highest results concern mental support expectations, and the lowest – a lack of the need of support), as well as behavioral disengagement (the highest results concern psychological support expectations, and the lowest – mental support expectations), were stated.

In the scope of the study results concerning support seeking, it was ascertained that strategies such as self-blame, substance use, venting of emotions, self-distraction, are strategies used by people who expected mental support most frequently and at the highest level of obtained study results. Whereas, people applying strategies, such as active coping, positive reframing and seeking emotional support, obtained the lowest results in the scope of mental support seeking. These results can be explained by the fact that non-constructive strategies of coping promoted seeking professional help. People applying constructive strategies were seeking emotional support from people from their closest social environment, their friends and family. It is confirmed by obtained results which indicated that in the area of expected types of support from particular groups, institutions, a statistically significant difference occurred only in the scope of instrumental support seeking. People seeking this type of support expected

help from their friends and family the most. It is worth underlining that a similar statistical trend was also noticed in the case of emotional support seeking. It corresponds with results of research conducted by Au et al. (Au et al., 2023), who indicated that people can perceive their interpersonal or social network as a huge source of strength in the situation of a pandemic crisis. Students, who have difficulties with establishing emotional and social bonds, are more susceptible to a mental breakdown (Lawal et al., 2023).

A lack of comprehensive medical diagnostics and treatment in the area of mental health issues can hinder implementation of important developmental tasks of early adulthood, such as preparing for a professional career and maintaining friendships and relationships between people, which can hinder future professional and relationship success. COVID-19 has had a negative impact on students' learning results and perseverance, threatening their future professional perspectives (Lederer et al., 2021; St Amour, 2021). Slightly more optimistic data comes from the report of the Active Minds foundation concerning students' mental health, which indicates that approximately two thirds of them (66.89%) reported readiness to support others in crisis situations. Respondents stated that they received information from their institutions concerning various problems in the area of mental health (66.41%) and effective strategies for coping (49.15%). Students most frequently used virtual interaction with friends (68.31%), personal contact with friends (53.92%), engaging with pets (53.88%) and receiving support from the loved ones with whom they lived (40.27%) (Active Minds, 2020).

Coping styles play a crucial role for mental health, especially during adaptation to stress triggered by Covid-19 (Zhu et al., 2020). For instance, the research conducted in Australia indicated that behavioral disengagement leads to higher levels of depression (Gurvich et al., 2020). The results of other studies (Lopes and Nihei, 2021) confirm that adaptation ways of coping can actually protect students in times of a pandemic crisis.

Recommendation for universities

Given the results of the research, it seems legitimate to present several recommendations for universities concerning implementation of preventive measures during isolation restrictions that apply to students. They should include screening in terms of stress, increased access to mental health services, educational workshops on coping skills and virtual offers of recreational-social meetings (Samuolis et al., 2023). Furthermore, it seems justified to introduce educational classes aimed at increasing the level of professional knowledge on crisis situations, and classes aimed at improving communication and establishing relationships (Waghmare et al., 2023). As results from our research, it is particularly important for younger students, who left one social environment (high school), and are only at the initial phase of becoming acquainted with new peers at studies.

Strengths and limitations

The strengths of the research include an examination of students' coping styles and expected support in the situation of the COVID-19 pandemic both at the beginning and at the end of it. The current results might also serve as a point of reference and comparison for further studies on coping strategies among students and the support expected by them, in Poland and in other countries. In turn, this could support the development of local strategies of supporting students in better organization of their academic careers and personal lives in a post-pandemic situation. It is worth mentioning that the UN General Assembly in the adopted resolution (United Nations) naming 27 December as the International Day of Epidemic Preparedness acknowledges the threats and potential dangers in people's lives and highlights the need for increased awareness, conducting scientific research and exchange of experiences in order to search for the best solutions on both the local and national levels. This message finds direct expression in the topic of studies conducted by our team.

A limitation of the conducted research is the high proportion of students of social sciences and humanities in the studied sample. These faculties are more often chosen in Poland by women (73%) than men (27%) (Główny Urząd Statystyczny, 2019). This resulted in a high gender imbalance among participants. Weakness can also include the fact that the snowball sampling method was used to gathered data.

Conclusions

Mental health challenges, also among students, triggered by the pandemic have occurred rapidly and suddenly, therefore, it is important to gain knowledge concerning effective strategies for coping with the constantly changing pandemic situation and the present post-pandemic situation, also in the area of widely understood education. Studying students' strategies for coping in a pandemic situation and the support expected by them required a lot of attention to introduce conclusions to the measures aimed at improving students' health (Kagoya et al., 2023). Another study, conducted by Baumann *et al*. (Baumann et al., 2021), took into account living conditions during lockdown, which also had a clear impact on mental health. Research should be continued to verify how students cope during consecutive stages of studying in post-pandemic times, when they have to face new challenges, such as attending classes intramurally or online, which has become very popular during the pandemic; direct contact with lecturers and peers, which for some students happened only at the last year of studies; struggling with behavioral addictions, in particular phonoholism and addiction to games and social media.

Apart from the aforementioned limitations, the obtained results contributed to a better recognition of the characteristics of students' environment and strategies for coping with stress used by them. Furthermore, they provide background for designing

areas of support for students, in particular psychological, emotional and financial, which the university and cooperating entities should ensure for young people.

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